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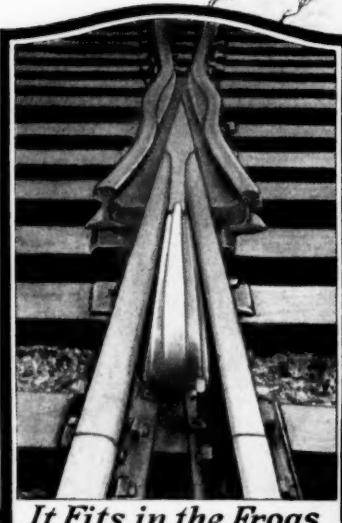
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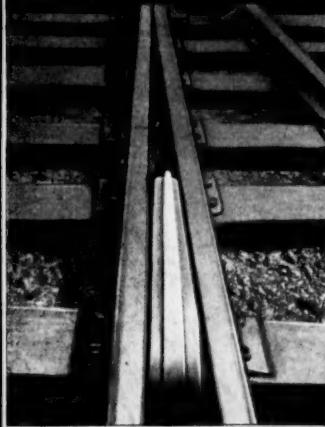
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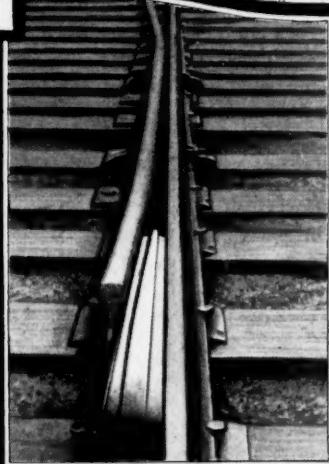
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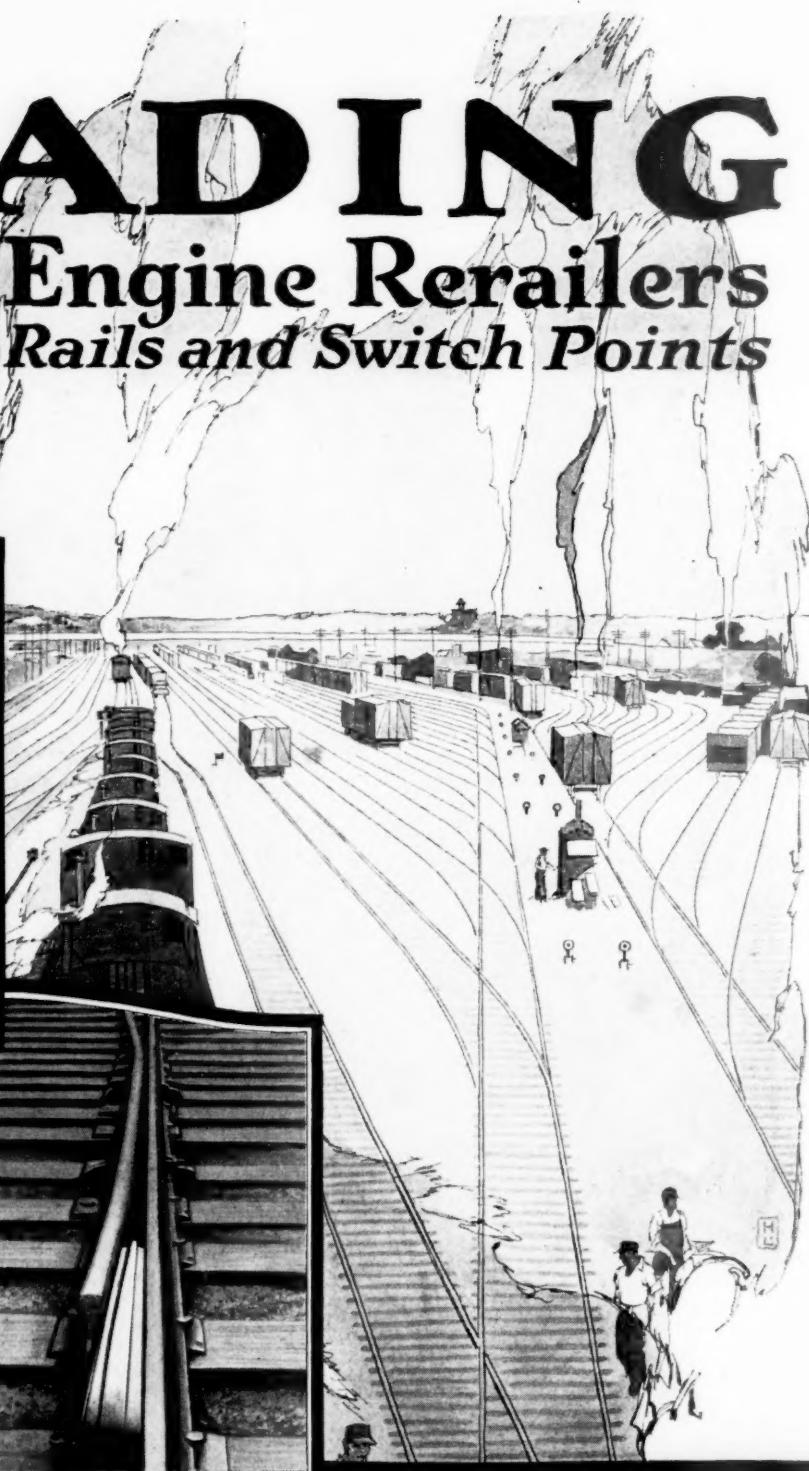
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EDITORIAL

Railway Age

EDITORIAL

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While Jett Lauck's "Estimated Possible Savings" have been so discredited that further comment would serve to clothe it with an unwarranted significance, it is

Don't Overlook Any Bets well to bear in mind that this document had its inception in a knowledge that the public has taken on a new attitude with respect to the railroads.

Under the Transportation Act the officers of the roads are charged with responsibility for the efficient management of the properties. No matter how successful they may be in this endeavor, both as to earnings and service, their's will always be the burden of proof that every effort is being made to promote efficiency. In other words, it will be strictly up to *all* the roads to take advantage of any development as to methods and materials that show a real economy. If some roads prove successful in obtaining excellent results in this direction through the use of treated timber and tie plates, water softeners, mechanical freight handling equipment, mechanical stokers, superheaters, locomotive cranes, etc., and (if we may dare to hope so), bonus and piece work systems, the officers of other roads will be compelled to take more than an academic interest in such improved methods. On them is immediately imposed the problems, can it be applied on our road? If so, how? If not, why? These are not merely questions of accountability to the directors and stockholders, but represent a responsibility to the public in general and the shippers in particular.

The Railway Accounting Officers' Association at its annual meeting at Atlantic City, N. J., beginning June 8, will complete one of the most successful years

Accounting Officers Meeting in the history of that active and increasingly influential organization. The docket this year is about twice as large as that of last year, and among the

proposals to be presented by the various committees are a number of steps of unusual importance. The Railway Accounting Officers' Association is composed of men of high calibre. It is unusually well officered; the members think a great deal of their organization and are willing to work hard for its success and for the welfare of their profession. The association became affiliated with the Association of Railway Executives a little over a year ago. This affiliation has given the accounting officers' organization something of a new standing and prestige. Combined with this, the accounting officers have been greatly assisted during the past year by the elimination of the restrictions which hampered them during the period of federal control. It is these factors which the association has been able to take advantage of and which have assisted it in making for itself a record year. It is interesting to note one or two of the important features of the year's work. One is the progress made as to standard forms. Those originated for station accounting and practices are especially noteworthy, but, in general, it may be said that the number of new standard forms originated, not counting revisions, this year exceeds the number originated in nearly all the previous years of the association's history combined. An even more important step in the work during the past year is the proposal to make R. A. O. A. interline

accounting recommendations mandatory. Important steps along this line will be brought up at the June meeting and it is the expectation that eventually all the interline accounting recommendations will be made mandatory. It is fitting that this important step towards further greater uniformity in railway accounting should be a part of the work of a year which has been so successful.

Practically all railroads in the United States and Canada were requested to furnish information on ashpits to a com-

The Pros and Cons of Water Ashpits mittee of the American Railway Engineering Association last year. Answers to the questionnaires sent out failed to develop a great deal of the information desired but one thing was forcibly

illustrated; namely, the many different types of ashpits and the wide diversity of opinion regarding their respective merits. It is said that almost every type of ashpit in common use was recommended by some roads and criticized by others. Regarding water ashpits, the disadvantages are said to include relatively high first cost, high cost of maintenance and operation, difficulty with wet ashes in winter and possible danger to workmen. In view of these objections, why are water ashpits the most popular type for modern terminals turning sixty and more locomotives in 24 hours? The advantages of water ashpits include the elimination of hot gasses and warped cinder cars, high emergency storage capacity, reduction of manual labor to a minimum and ability to handle large amounts of ashes rapidly. A relatively high first cost of ashpit and crane must be conceded but the interest on this investment is saved many times over where large amounts of ashes are involved. The cost of maintenance is almost solely a question of proper design, and operating costs, exclusive of interest and depreciation, are small. The difficulty of handling wet ashes in severe winter weather is very real but should not be charged against water ashpits solely since all ashes must be sprinkled or cooled before being loaded into cinder cars. Regarding danger, it is significant to note that not one of the railroads referred to in the committee's report mentioned danger as a disadvantage of water ashpits. Evidently this objection also is overcome by proper design.

An employee with but a slight knowledge of the fundamental principles underlying his work and of its importance

Education and Efficiency to the organization as a whole cannot manifest the interest which is necessary to make him the most efficient worker. In order to overcome this handicap and to obtain the greatest

possible co-operation, railroads as well as other organizations are coming to realize more and more the benefits to be derived from a systematic plan of education. An excellent example of the work being accomplished along this line is the system employed by the telegraph department of the Chicago, Rock Island & Pacific. The superintendent and assistant superintendent of telegraph organized the wire chiefs,

operators and repeater attendants of the system into a society for the purpose of the improvement of the members in the practical technical details of the telegraph and telephone work. The society is the outgrowth of a course of instruction which has been carried on by G. D. Hood, superintendent of telegraph, for the past year and a half with a view of bringing to the men of his department a better knowledge of the telegraph and telephone. Officers were elected, a constitution and by-laws adopted and committees appointed, and the organization is now well under way. The Committee of Direction consists of three members elected annually, one of whom shall be chairman-secretary. Thus, not only have the men had an opportunity to learn of the fundamental principles underlying their work and of the latest developments in the telegraph field, but because of this increased knowledge their interest has been aroused and they take a greater pride in their department and its efficient operation than was possible before. Similar methods may be found of value for use by other department heads who are considering plans for increasing efficiency.

At the National Foreign Trade Convention in Cleveland last week great emphasis was laid on the importance of a thriving

The Foreign Trade Convention foreign trade in maintaining healthy economic conditions in this country. Indeed, one speaker went so far as to blame the present depression principally on the stagnation in our foreign

markets. Whether or not the volume of our foreign business is the chief factor in determining prosperity or depression in this country, there can be no doubt but that it is at least a contributing factor of no small importance. It is to the interest of everyone, therefore, who is seeking a revival in business, to assist in bolstering up our foreign commerce and to do everything possible to insure its future stability. The various Edge law banks which have been organized to extend long term credits to foreign purchasers will doubtless be of great assistance in enabling American manufacturers to increase their sales abroad. Possibly in the development of these institutions lies the solution of our present difficulties in reviving our foreign business. However, the root of the problem lies deeper: in order to put our export trade on a sound footing, we must either accept a great quantity of imports or we must plan to make large permanent investments abroad. Credits advanced under the Edge law plan are satisfactory as a temporary arrangement, but to secure the future stability of foreign trade, which is necessary if it is to be a desirable part of our economic structure, American investors must be induced to become regular purchasers of the securities of legitimate foreign enterprises. One of the most important fields for such investments, especially in relatively undeveloped countries where the opportunities for building up trade are consequently the greatest, is in foreign railways. Permanent investments of this character have the added advantage of securing a preference for American goods to fill the needs of the concerns in which the investments are made. In view, probably, of the severe decrease in our foreign trade in late months scant attention was given at the convention to this and other fundamental phases of the problem. Interest was diverted instead to popular remedies which promise a speedy, although probably not a permanent, solution for the present situation. Neither was any particular attention paid to the phases of the problem affecting the railroads or the railway supply manufacturers beyond, possibly, the suggestion that no return to normal conditions could be complete without a reduction in freight charges. The plan of the convention, however, was doubtless well considered beforehand by those in charge and it must be admitted that the phases of foreign trade chosen for discussion were handled in a thorough and painstaking manner.

Two advanced steps have been taken by the Mechanical Division of the American Railway Association in dealing with the problem of improving general freight car conditions. Inter-

Car Betterments in Interchange

change rules 114 and 120, the former dealing with the rebuilding of cars destroyed on foreign lines and the latter with the repair of cars on foreign lines requiring extensive repairs, now permit the repairing line to apply such betterments as metal draft arms, steel draft members, transom draft gears, etc., where formerly the rules required that the original plan of construction be strictly followed. The adoption of a special letter ballot in December, 1920, authorized the application of ends on box cars as specified for new cars when cars with steel underframe or steel center sills with a sectional area of sills of not less than 24 sq. in., required repairs to the ends consisting of new posts and braces. The nature of these two steps, however, is negative rather than positive. The provisions of these rules are not mandatory and their value lies largely in the fact that the door has been opened so that obsolete equipment coming within their provisions may be improved if the repairing line is inclined to do so and does not meet too much opposition from the car owner. Weak as these rules are likely to prove, so far as actual results are concerned, however, they undoubtedly mark the maximum advance which the sentiment of the representative membership of the Mechanical Division would permit, and they are strong evidence of the difficulty of improving equipment conditions when the general interests of the railroads as a whole meet the opposition of the immediate interests of the individual roads. This suggests the need for placing the interchange rules on a basis which will bring into harmony these two opposing interests. One of the most logical means of accomplishing this end is the establishment of prices for labor and material chargeable for repairs under the interchange rules, on a basis which will include a clear profit above the costs and the overhead. Such a policy not only will create an incentive for the repairing line to do all of the work which should be done on each foreign car repaired, but will make it distinctly to the advantage of the car owner either to retire or completely rehabilitate most of the equipment coming under these rules.

Where the Money Went

THE SENATE COMMITTEE on Interstate Commerce began this week an investigation of the railroad situation. While the railways are suffering from a heavy decline in traffic there is, so far as we know, no dissent from the proposition that their troubles are mainly due to the fact that their operating expenses have been, and still are, too high. Therefore, the Senate committee's investigation probably will resolve itself chiefly into an inquiry as to why the operating expenses have been, and still are, so high.

Upon this point, wide differences of opinion have been expressed. Railway executives contend that expenses of all kinds have been too high, but that their difficulties are chiefly due to an excessive payroll. The labor leaders claim that the payroll is not excessive, but that the operating expenses are excessive almost entirely because the railways have been "wasting" money in the purchase of fuel and materials.

There is no question that the money has been, and is, going too fast. Where has it been going? Statistics of the Interstate Commerce Commission throw light upon this subject.

In 1916 the payroll, of which 96.4 per cent consisted of the wages of the employees, consumed 60.5 cents out of every dollar of operating expense incurred. In 1920 the employees got 97.5 per cent of the payroll, and out of every dollar of operating expense incurred 63.4 cents was chargeable to the

payroll. These figures show that during this period the payroll increased relatively more than other operating expenses.

The largest expenditure made by the railways, except that for labor, is that which they make for materials used in maintenance of their equipment (locomotives and cars) and of their tracks and other permanent structures. They buy material used in the maintenance of equipment and in the maintenance of way and structures from numerous manufacturing concerns. The labor leaders claim that they have paid excessive prices to these concerns because, as is alleged, the railways and the manufacturing concerns are under the same financial control.

Is it a fact, then, that the cost of the materials used in maintenance has increased more than the cost of the labor used in maintenance? In the three years ending with 1917 the railways paid to labor 47.32 cents out of every dollar expended for maintenance of equipment, while in 1920 they paid labor 57.49 cents out of every dollar they spent for maintenance of equipment. In the three years ending with 1917 the railways paid for materials 29.08 cents out of every dollar expended in the maintenance of equipment, while in 1920 they paid for materials only 26.57 cents out of every dollar expended for maintenance of equipment. These figures show conclusively that the increase in the cost of maintaining equipment was due in much larger measure to increase in the cost of labor than to increase in the cost of materials.

In the three years ending with 1917 the railways paid to labor 55.64 cents out of every dollar they expended for maintenance of way and structures, while in 1920 they paid to labor 60.55 cents out of every dollar that they spent in maintenance of way. How about the cost of materials? In the three years ending with 1917 they paid for materials 35.63 cents out of every dollar expended for maintenance of way, while in 1920 they paid for materials only 30.22 cents out of every dollar they spent for maintenance of way.

These figures leave no room whatever for question as to where the greatest relative increase in railway expenses occurred. It was in the payroll.

Probably the greatest increase in expenses should have been in the payroll. Those, however, who got the benefit of the fact that the increase in the payroll was greater than other increases in expenses hardly seem to be in a good position to denounce the other increases as excessive and due to mismanagement.

Within recent months not only wages in other industries and the cost of living, but also the prices that the railways have to pay for materials have declined. The decline in the prices of materials has been accompanied by reductions in the wages of the workingmen employed by the concerns which make these materials. Can anybody logically contend that the prices of the materials that the railways buy should be reduced, with resulting reductions in the wages of the men employed by those who make them, and at the same time contend that railway wages should be maintained at much the highest level to which they ever were advanced?

Development of Port of New York

THE STATES of New York and New Jersey have, after about four years of effort, succeeded in the establishment of a centralized port authority. The effect of this will be widespread not only because of the bearing which the port of New York has upon the nation, but also because of the fact that it establishes a precedent upon which the solution of similar matters of mutual interest to other states can be based. The port of New York has long stood out as the greatest of all American ports but it has likewise stood out as one of the most expensive when viewed from the angle of unit transportation costs. Split geographically by the Hudson river and its lower reaches into two major parts and then again divided and subdivided by numerous municipal-

ties on the New Jersey side, its development has been influenced by almost as many different plans and policies as there were municipalities. This was clearly recognized by the joint harbor commission appointed in 1917 to make a study of the situation as it existed and to recommend a plan for the development of the port. In its report as presented a short time ago and given in abstract on page 269 of the January 28 issue of the *Railway Age* it distinctly pointed out the need of a single authority created under a compact that would be more than a mere pledge or agreement since it must of necessity, to be of any real worth or value in building up the port, be of a nature that would define and bound a district within which the two states would actually co-operate, as well as create an organization or agency with sufficient powers to bring about the needed results.

Yet, in spite of the very obvious need for such a joint board with clearly defined powers, petty jealousies, partisan politics and what not, all revolving about the loss of jurisdiction over parts of the harbor by individuals and by municipalities, made their usual appearance. The signing of the port treaty between the states of New York and New Jersey on April 30 marks the realization of the two states that if progress is to be made in and at the port of New York, all local jealousies and other similar detriments must be eliminated or be made inconsequential. This has been done and the port of New York as it stands now is under the jurisdiction of a single port authority or joint board. Each of the states has relinquished its rights over its own particular shore lines, thus conferring upon the new board the power to control or to designate the building and developing of piers, warehouses, rail and water connections and any other facilities thought necessary.

Thus the first or legal part of the plan of the joint commission has been carried out to a successful conclusion. The physical plan comes up next before the two legislatures. Involving as it does some radical departures from orthodox port methods, its adoption will undoubtedly be strongly fought. Honest and sincere endeavor will vie with personal ambitions and jealousies in bringing about various changes in the physical plan as proposed, for there are features contained in the plan open to considerable criticism. The necessity for action is so great that it is sincerely to be hoped that these conflicting interests will be able quickly to get together on a workable basis.

Wabash

THE CAREER OF THE WABASH since it was reorganized and taken out of the hands of receivers on November 1, 1915, has been characterized by progressively increasing efficiency of operation. This improvement in operation was reflected in net earnings in 1916 and 1917, but during federal control increased costs of fuel, higher wage scales and other factors typical of the federal control period resulted in decreased net and in 1920, in an operating deficit. The standard return for the Wabash was set at \$5,826,810, although the corporation protested that the charges made during and after the receivership entitled the company to a compensation of \$8,681,000. In 1918 the first year of government control, the net railway operating income earned for the Railroad Administration was \$3,715,518; in 1919, \$831,152, and in 1920 there was a net railway operating deficit for the entire year of \$3,759,790. So far in 1921 the road has been doing better than it did in the corresponding months of 1920. The road had a net operating deficit for January, 1921, amounting to \$145,113. In February, the balance was on the other side and there was a net operating income of \$105,597, making for the two months a deficit of \$38,516, as compared with a deficit more than ten times that figure, or \$385,442, in the first two months of 1920.

The Wabash operates 2,473 miles of line, of which it

owns 2,034, leases 9 and operates 430 under trackage rights. These lines are shown on the map. It should be observed that more than half the mileage over which the road has trackage rights constitutes that part of the system which gives it its entrance into Buffalo, N. Y. The lines of the Wabash extend to the neighborhood of Detroit. From there east the road operates over the Grand Trunk to Black Rock, N. Y., 228 miles, and thence on the Lackawanna to Buffalo, 15 miles. Considering the territory traversed by the Wabash, it is natural that its traffic should be highly diversified. In 1920 the figures were as follows: Products of agriculture, 17 per cent; products of animals, 5 per cent; products of mines, 39 per cent; products of forests, 6 per cent, and manufactures and miscellaneous, 28 per cent. The road gets a comparatively long haul on this traffic and in 1920 the average haul was 271 miles.

The Wabash in 1920 did more business than it did in 1919, but not as much as in 1918 or 1917. It differed from the larger number of roads whose annual reports have already been reviewed in these columns in that 1920 was not a record-breaking year from the standpoint of business done. The freight revenue in 1920 was \$43,324,700, as compared with \$35,255,548 in 1919. The total tonnage of revenue freight carried was 16,845,541, as compared with 14,686,194 in 1919. The 1917 figure was 18,156,259, that being the greatest in the company's history. The revenue ton-mileage in 1920 was 4,566,144,218; in 1919 it was 4,027,016,200, but in 1917, 4,785,374,795.

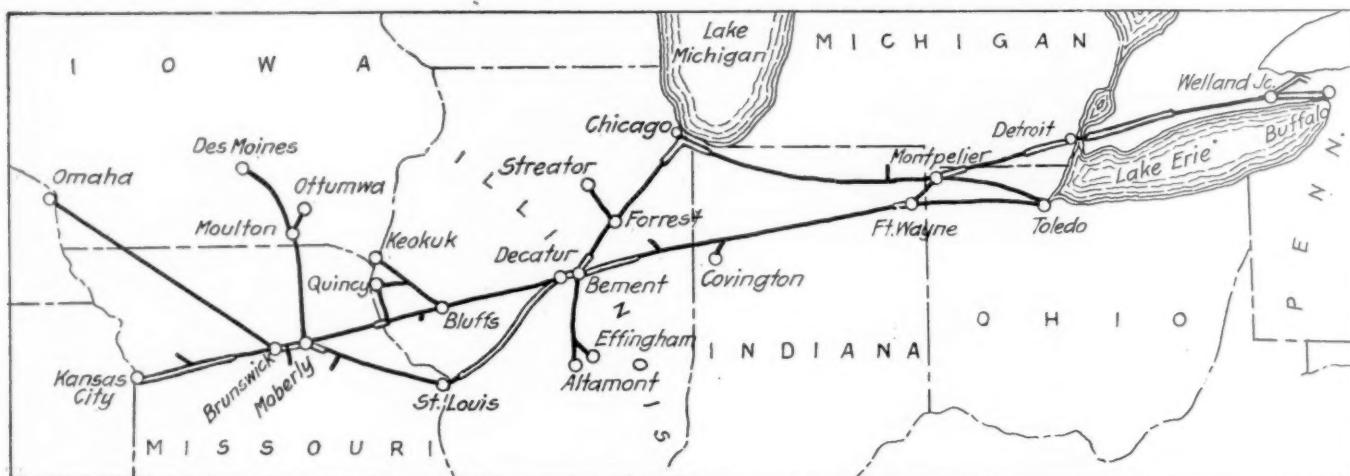
The road has increased its operating efficiency rather markedly in recent years. One of the factors that stands out in greatest relief in this connection is that of the progressive

siderably above the average for the eastern district and, in fact, for the country as a whole.

The story of the increase in revenues in 1920 over 1919, the even greater increase in operating expenses and the corresponding decrease in net was the same on the Wabash as on nearly every other railroad. The increase in operating revenues in 1920 over 1919 was 22.8 per cent; in expenses, the increase was 32 per cent. The decrease in net has already been commented on. The operating ratio in 1920 was 98.13 per cent and in 1919, 91.28 per cent. The increase in operating expenses as between the two years amounted to \$14,272,366. The report shows that increases in pay through the Labor Board's award last July amounted approximately to \$4,700,000 and that increased prices of fuel, materials and supplies made up about \$1,900,000. The Wabash paid for fuel coal in 1920 \$3.52 a ton; in 1919, \$2.74. In 1916 the average cost per ton was \$1.60.

The Wabash in 1920 effected considerable improvement in its equipment and roadway. It received from the Railroad Administration 2,800 double sheathed box cars, and 1,000 hopper cars. It also authorized the rebuilding of 600 box, 200 flat and 500 coal cars and the conversion of 250 box cars to automobile cars. The acquisition of 20 light Mikado locomotives has already been noted. During the year there were laid 21,178 tons of new 90-lb. rail, as compared with 5,337 tons in 1919; there were put in main track 797,576 ties and 165 miles of track were reballasted. These figures represent as a whole considerably more work done than the average for several years.

The corporate income account for 1920 shows that without the standard return and guaranty the road would have had a



The Wabash

increase in revenue train loading. The average revenue train load in 1920 was 638 tons. In 1919 it was 627 tons, the progressive increase over previous years being shown by comparison with the figures for those years, which are as follows: 1916, 517 tons; 1917, 568 tons; 1918, 606 tons. This increase in train loading has been largely due to new power of larger capacity and to the modernizing of existing locomotives. The average tractive effort per locomotive at the end of 1916 was 30,317 lb.; at the end of 1919 this average had become 32,597 lb., and at the end of 1920 it was 33,134 lb. The increase in 1920 was due to the acquisition of 20 light Mikado locomotives allocated to the road by the United States Railroad Administration. Another figure that is of interest in showing the efficiency of operation is the average revenue load per loaded car. In 1920 this was 23.4; in 1919, 22.56. In 1920 the Wabash secured a mileage per car per day of 27 as against 26.2 in 1919. The ton-miles daily per car in 1920 were 526. This compared with 469 in 1919 and was con-

tinued to increase in 1920. The standard return for the first two months of the year amounted to \$971,135. The amount accrued in accordance with the guaranty provisions of the Transportation Act covering the six months of the guaranty period was \$8,063,775. The balance for the year was \$1,983,943, as compared with \$1,747,228 in 1919, \$632,705 in 1918, or \$4,172,045 in 1917.

The following gives the figures for operation in 1920 as compared with those for 1919:

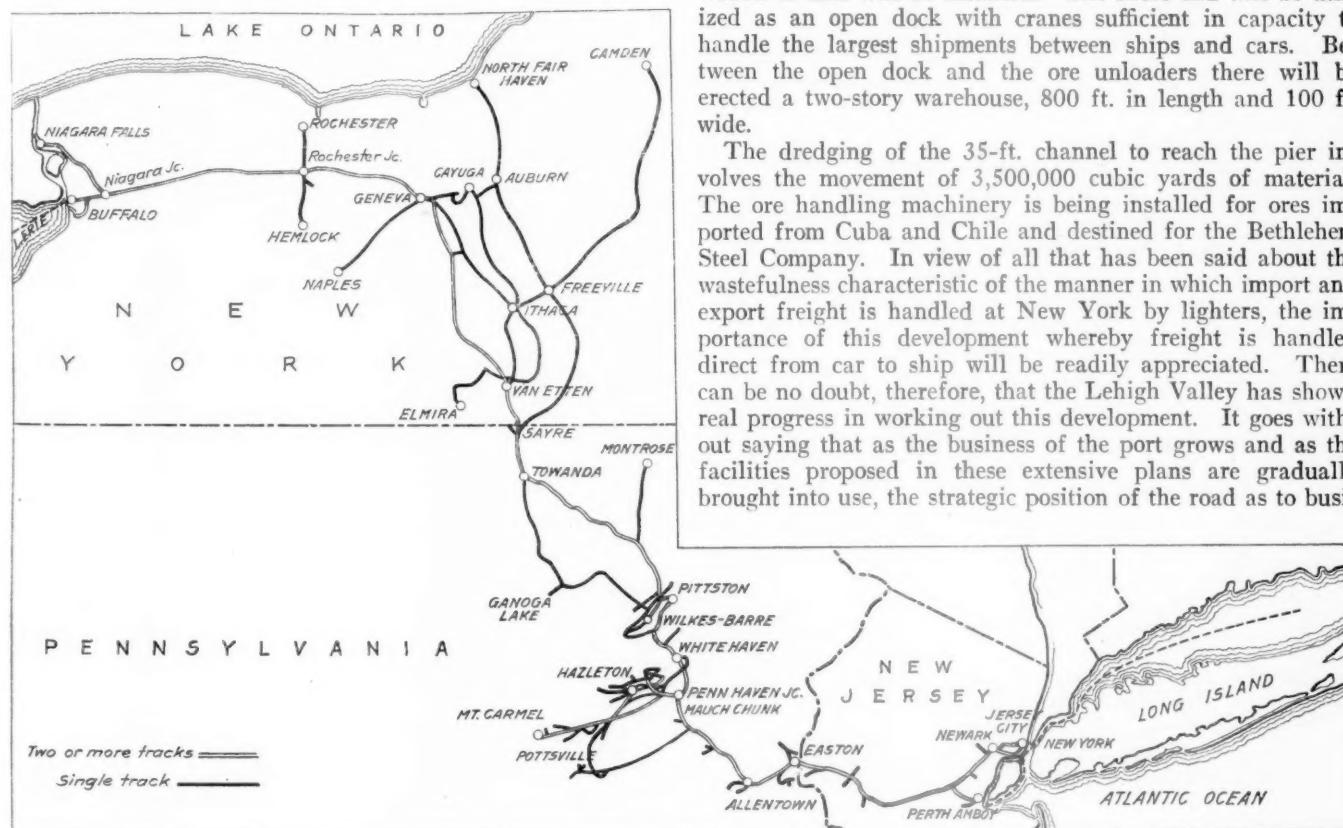
	1920	1919
Mileage operated.....	2,473	2,476
Freight revenue.....	\$43,324,700	\$35,255,548
Passenger revenue.....	11,218,051	10,143,356
Total operating revenue.....	59,982,282	48,847,086
Maintenance of way expenses.....	10,541,360	8,086,880
Maintenance of equipment.....	14,735,861	9,358,676
Traffic expenses.....	1,169,383	657,109
Transportation expenses.....	30,023,953	24,610,615
Total operating expenses.....	58,859,395	44,587,030
Net from railway operations.....	1,122,887	4,260,056
Tax accruals.....	1,574,473	1,445,726
Total operating income.....Def.	454,490	2,805,154

The corporate income account was shown in the Railway Financial News column of the *Railway Age* of April 29, page 1054.

Lehigh Valley

ANTHRACITE COAL furnishes in the neighborhood of 42 per cent of the total freight tonnage of the Lehigh Valley. The road ranks second among the anthracite carriers as to the amount of anthracite tonnage originated, but it is first as far as concerns the tonnage of domestic sizes. Because of the recent decision of the Supreme Court ordering the segregation of its coal properties, the Lehigh Valley has been more or less in the public eye of late and it will probably be in the public eye more rather than less in the near future when the segregation plan is announced. In addition to its being one of the anthracite coal carriers, the Lehigh Valley is also characterized by the excellent service it renders to shippers of coal and other freight.

Probably the most striking thing about the Lehigh Valley, however, is the improvement program that road has been carrying out over a term of years to give it a greater capacity



The Lehigh Valley

and to enable it to be a more efficient carrier in general. The improvement program has included, more particularly, substantial progress as to its equipment and increases in the terminal facilities at various strategic points on the system.

President E. E. Loomis, in the 1920 annual report, refers to the program in these words: "Probably the greatest problem confronting the railroads will be to provide adequate facilities to handle the business of the country, which, it is fair to assume, will increase in the next ten years in the same proportion as in the past decade. This your company has constantly in mind, and at this time is giving special attention to enlarging its terminal facilities at Buffalo and in New

York harbor and to keeping its rolling stock in first-class condition."

No one who has read of the improvements or additions which the Lehigh Valley has been making to its terminal facilities in New York harbor can fail to have been impressed by the great amount of work which the road has already carried out at that port. Still less can he fail to be impressed by the plans contemplated for the future. Particular reference, as far as speaking of the future is concerned, is made to the development now partly under way at what is known as the Claremont terminal. When this terminal is completed, it will be without much doubt the most extensive and best equipped facility of its kind in New York harbor. It is situated on the New Jersey side of New York Bay, between the Lehigh Valley's present terminals at Black Tom and Constable Hook. The plans call for a rail and water terminal with three piers each approximately 7,000 ft. long with slips 450 ft. wide and with sufficient depth of water to accommodate vessels drawing up to 35 ft.

Work is now proceeding on the first pier. For the present this is to be 3,596 ft. long, offering berthing space for five large ocean going ships. At the outer end ore unloading machinery capable of handling 2,500 tons of ore an hour from vessels to cars will be installed. The shore end will be utilized as an open dock with cranes sufficient in capacity to handle the largest shipments between ships and cars. Between the open dock and the ore unloaders there will be erected a two-story warehouse, 800 ft. in length and 100 ft. wide.

The dredging of the 35-ft. channel to reach the pier involves the movement of 3,500,000 cubic yards of material. The ore handling machinery is being installed for ores imported from Cuba and Chile and destined for the Bethlehem Steel Company. In view of all that has been said about the wastefulness characteristic of the manner in which import and export freight is handled at New York by lighters, the importance of this development whereby freight is handled direct from car to ship will be readily appreciated. There can be no doubt, therefore, that the Lehigh Valley has shown real progress in working out this development. It goes without saying that as the business of the port grows and as the facilities proposed in these extensive plans are gradually brought into use, the strategic position of the road as to busi-

ness to and through the port of New York will be greatly enhanced.

President Loomis in the statement quoted above, referred also to the maintenance of equipment. This matter was a somewhat striking feature of the Lehigh Valley's operations during 1920 and for that reason merits more than passing attention. The Lehigh Valley has for many years been carrying out a program of securing larger power and of modernizing locomotives already in service. When the property was returned to private control on March 1, 1920, it was found, as was commonly the case on most roads, that the equipment had not been properly maintained. This was true particularly of cars which had been off line and which were returned

in poor repair. The Lehigh Valley promptly took steps to remedy this situation and to this time it has not reduced its expenditures for maintenance of equipment despite the present high costs or the sharp falling off in business. The expenditures for maintenance of equipment in 1920, it will be noted, were nearly double those for maintenance of way. In the first two months of 1921 expenditures for maintenance of equipment were nearly \$1,000,000 in excess of those for the same period of 1920, although expenses of other kinds were considerably less in this period in 1921 than in 1920. It was not unusual for a road to spend more for maintenance of equipment in January and February, 1921, than in the same two months of 1920, but it was unusual for a road to spend as much more in proportion as the Lehigh Valley has done.

The Lehigh Valley did more business in 1920 than it did in 1919, but not as much as in some of the years immediately preceding. The total tons of revenue freight carried in 1920 were 32,103,897 as compared with 30,934,972 in 1919, or 37,250,739 in 1918. The ton-mileage of revenue and non-revenue freight in these years compared as follows: 1920, 6,558,302,627; 1919, 5,968,348,276 and 1918, 7,136,881,128. The average haul of revenue freight in 1920 was 197 miles; the average revenue per ton per mile 0.971 cents. The Lehigh Valley in the years up to 1918 made some rather remarkable increases in its average train load. The average revenue tons per train in 1916 were 654; in 1917 this figure was raised to 751 tons, an increase of 15 per cent in a

a quite different result from the figures of operation; it showed a net income of \$13,511,917 as compared with \$4,977,213 in 1919 or \$6,592,834 in 1918. The 1920 net income includes, of course, the standard return for January and February, and the guaranty for the guaranty period. It also includes an item of \$15,532,351 dividend income. This item was \$14,343,674 greater than in 1919, the difference being due to the fact that in 1920 the Lehigh Valley received extraordinary dividends from its coal properties, Coxe Brothers & Co. and the Lehigh Valley Coal Company, paid out of earnings in former years. Dividends paid by the Lehigh Valley during the year amounted to \$4,245,749, the payment on the common stock being 7 per cent. The interest charges for the year totaled \$4,580,839 on funded debt and \$393,362 on unfunded debt. Rent for leased roads, however, amounted to \$2,195,092. The profit and loss surplus at the close of the year was \$36,326,576, having increased from \$25,965,934 at the close of 1919. An interesting feature of the Lehigh Valley's financial standing is that although the road has \$2,400,000 of equipment trust certificates outstanding none of these certificates are in the hands of the public.

President Loomis in his report has some pertinent remarks concerning the present railroad situation that are so well put as to deserve quoting. He said, "There has been a recent tendency to find a connection between the present business depression and the increased transportation charges. A study of the situation, however, indicates rather that business conditions merely are reflecting the general disorganization and unsettlement following the war and, while some rate reductions may be possible as the result of decreased operating costs, no general reduction in transportation charges should be made if the railroads are to furnish the facilities and high standard of service the commerce of the country demands."

"We feel that the Transportation Act has not had a fair trial up to this time, principally because of the decline in volume of traffic, which, toward the close of the year, accompanied the general business depression. Before any legislative changes are considered, it is to be hoped that the present law will be given further opportunity to demonstrate its value."

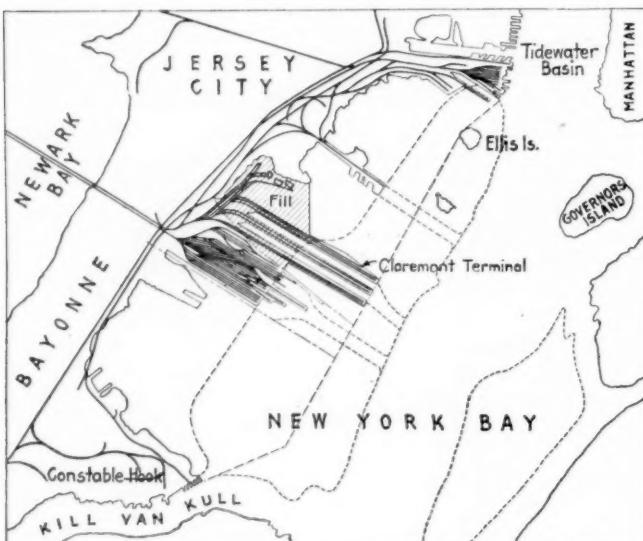
The operating results for 1920 as compared with those of 1919 are as follows:

	1920	1919
Mileage operated	1,448	1,448
Anthracite coal freight revenue.....	\$23,777,484	\$20,740,261
Bituminous coal freight revenue.....	2,630,066	2,335,477
Merchandise freight revenue.....	35,011,415	28,531,805
Total operating revenue.....	75,229,584	65,542,502
Maintenance of way expenses.....	11,952,836	9,824,647
Maintenance of equipment.....	23,656,316	18,152,710
Traffic expenses	984,338	481,733
Transportation expenses	41,486,497	28,870,526
Total operating expenses.....	80,503,974	60,309,198
Net from railway operations.....	Def. 5,274,390	5,233,304
Taxes	2,367,895	1,822,987
Operating income	Def. 7,649,345	3,408,253

The corporate income account is as follows:

	1920	1919
Operating income, 16 months.....	Def. \$4,263,487	11,316,196
Standard return, 1919.....		
Other income, including standard return for January and February, guaranty, dividend income, etc.*	26,453,346	13,164,434
Total income	22,189,859	8,187,221
Deductions from gross income.....	8,677,942	4,977,213
Net income	13,511,917	4,699,512
Dividends (7 per cent, 1920, 7 1/4 per cent, 1919)	4,245,749	

*Dividend income in 1920, \$15,532,351; in 1919, \$1,188,678.



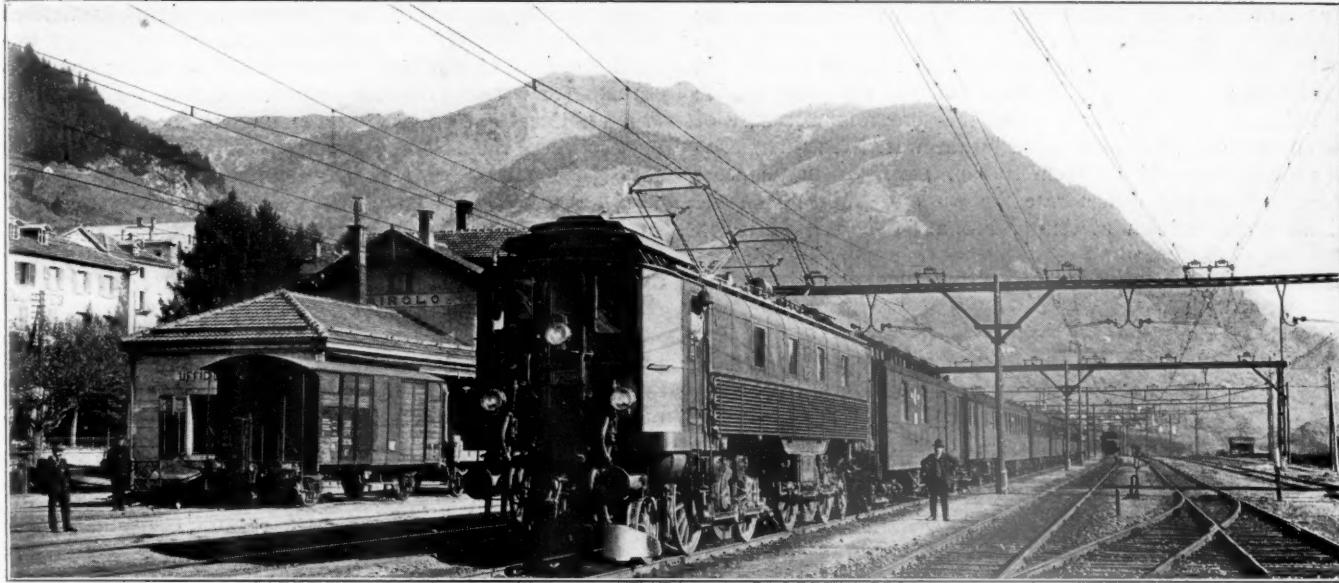
Relation of the Claremont Terminal to Other Terminals on New York Bay

single year. In 1918 it became 892 tons, a still further increase in a single year of no less than 19 per cent. This increase, however, has not been kept up since that time presumably because of the smaller amount of business carried. The revenue train load in 1919 was 878 tons; in 1920, 864 tons. The average load per loaded car in 1920 was 32.21 tons as compared with 30.62 tons in 1919. In 1920 the car miles per day were 21.9.

The operations of the Lehigh Valley in 1920 resulted in an operating deficit of \$7,649,345 as compared with operating income in 1919 amounting to \$3,408,253. This is the familiar story of an increase in gross, a still greater increase in expenses and a decrease in net. The operating revenues in 1920 amounted to \$72,229,584, an increase of \$9,687,082 over 1919; the operating expenses to \$80,503,974, an increase of \$20,194,776 over 1919. The operating ratio in 1920 was 107 and in 1919, 92.

The corporate income account for the year, however, shows

SENATOR TOWNSEND has submitted to the Senate concurrent resolutions adopted by the Michigan legislature petitioning Congress to repeal the Esch-Cummins act and also urging the amendment of the act so as to restore to the states the control of the capital securities of railroad corporations created under the sovereignty of the states or of railroads operating wholly within the territorial limits of a state.



Electric Passenger Train at Airolo

Electrification of St. Gotthard Line, Switzerland

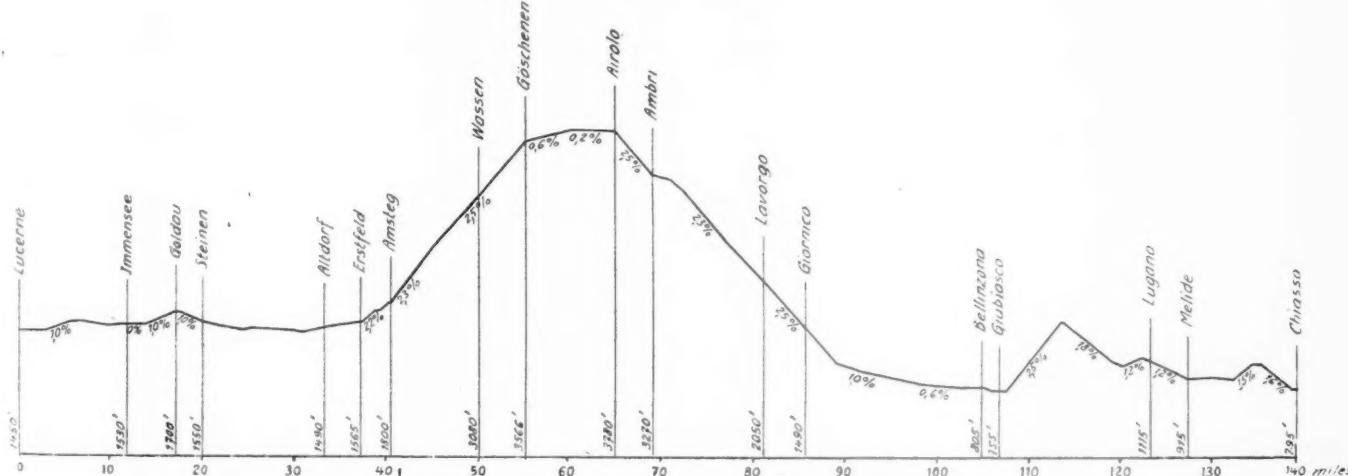
Road Has 60 Trains a Day—Average Grade of 2.5 Per Cent for Thirty Miles—Coal Is at a Premium

By Hans W. Schuler
Electrical Engineer

THE SWISS FEDERAL RAILROADS decided to electrify the St. Gotthard Line from Erstfeld to Bellinzona, a distance of 101 miles, in August, 1913. The St. Gotthard Line extends from Lucerne to Chiasso on the Italian border, a distance of 180 miles. That part of the line which is electrified represents a mountain railroad of the first order,

able were used in electrifying because of the heavy traffic, the severe climatic conditions and the importance of the line as a main connection between Germany and Italy.

The electrified section is all double track and has the heaviest and longest grades of any of the standard gage railroads of Switzerland. The northern part, from Erstfeld



Profile of the St. Gotthard Railroad. The Section from Erstfeld to Bellinzona Has Been Electrified

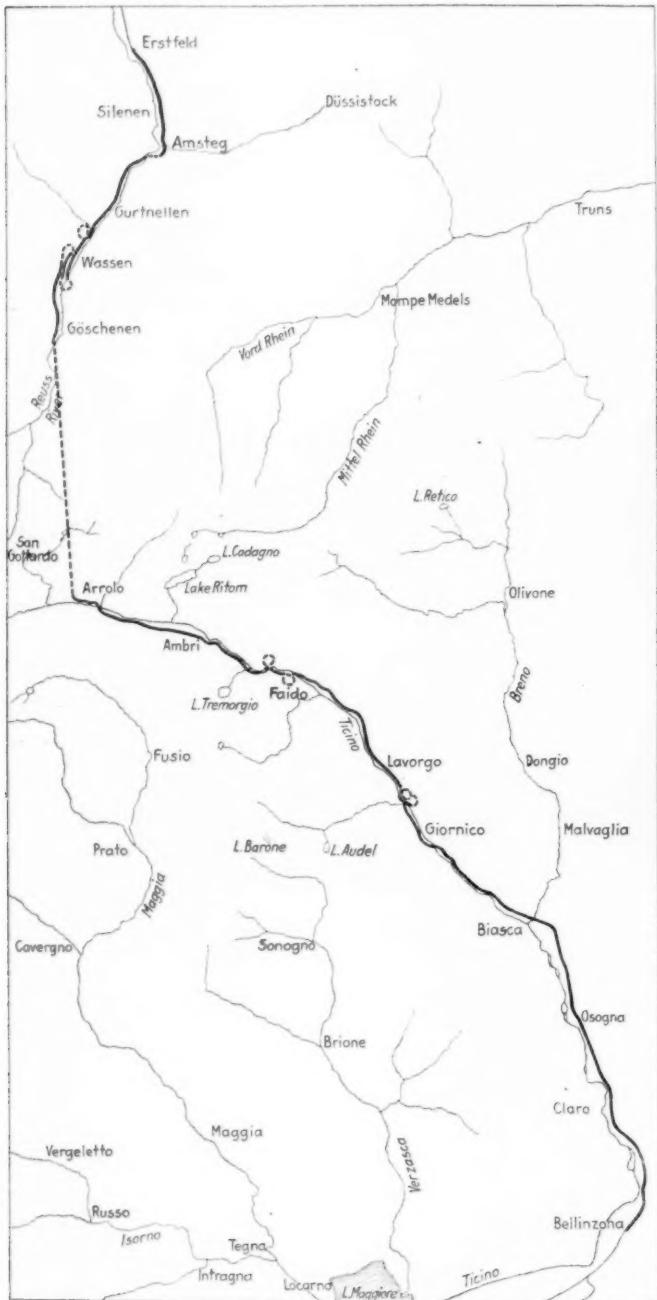
with its heavy grades, long tunnels and with the great differences in altitudes that are to be overcome.

In 1912 the amount of traffic handled from Erstfeld to Bellinzona was about 405,000,000 ton-miles. Every day 20 through passenger trains, 8 local passenger trains, 22 freight trains and from 10 to 20 special trains were run over this line. The best material and methods of construction obtain-

to Goeschinen, at the northern portal of the St. Gotthard tunnel, has an average grade of 2.6 per cent for 18.7 miles, and the southern part from Biasca to Airolo, at the south portal of the St. Gotthard tunnel, has an average grade of 2.5 per cent for 28 miles.

The original plan for electric power called for two power stations equipped with single phase generators, one situated

near Amsteg in the Reuss Valley on the north side of the Alps, and the other near Ambri-Piotta on the south side. In 1914 the work of building these power stations was started and it was planned to get them finished and ready for service in 1918. The world war checked this program. Because of the enormous difficulties created by the war, it was necessary to neglect some of the construction work of the Amsteg power station and concentrate the work of building on the Ritom power station at Ambri-Piotta. This station began



Map of the Electrified Section of the St. Gotthard Railroad

to deliver current to the contact line in the spring of 1920. The reason for this procedure was that when Italy entered the war the traffic on the St. Gotthard Line diminished considerably; it was evident then, that this traffic regress would continue for some time. The Ritom power station should be able to furnish all of the power required to run trains until about 1922, and it seemed advisable not to hasten the construction work of the Amsteg power station, but to wait a year or two for better conditions for construction work.

Because of the difficulties involved in getting materials such as iron, copper and insulators from other countries the construction of the contact line was delayed. Other obstacles encountered were the necessary reinforcement of the numerous bridges, due to the fact that the electric locomotives were heavier than the steam locomotives displaced, and to the necessity for rebuilding the stations at Goeschinen, Airolo and Bellinzona, which had reached their capacity in 1913. In spite of these delays the contact line through the St. Gotthard tunnel was ready for service in May, 1920, when the Ritom power station began to supply current. In July the construction of the contact line from Erstfeld to Goeschinen was completed and in November the contact line from Airolo to Biasca was ready for service. The great amount of rebuilding work now going on in the station of Bellinzona will make it impossible to start electric operation from Biasca to Bellinzona before early summer this year.

The Power Stations

The power station at Ritom is a hydro-electric plant with a head of 2,620 ft. Lake Ritom, situated about 2,950 ft. above the village of Ambri-Piotta, at an altitude of 6,000 ft., is used as a reservoir, and the water is held in the lake by a small dam at the outlet of the lake. The useful volume



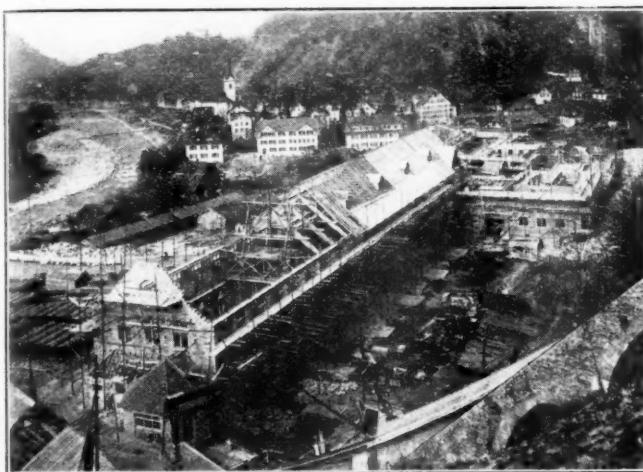
The Ritom Power Station. Pressure Pipe Lines from Lake Ritom Are Brought Down Through Cleared Space in the Timber Shown in the Rear

of the lake is 918,000,000 cu. ft. and the average outflow is 35.3 cu. ft. per second. This flow and head maintain a continuous output of 8,500 hp. at the shaft of the turbine. The reservoir capacity of this plant makes it admirably suited for co-operation with the plant at Amsteg, which has a varying output caused by the widely fluctuating flow of the Reuss River, on which it is located.

The Ritom power station is now built for an output of 48,000 hp. and its capacity will later be enlarged to 72,000 hp. At present there are three 9,000 kva. generators in service, each direct connected to a 12,000 hp. Pelton turbine, while a fourth set is being mounted. The generators develop single-phase, 15,000-volt power at a frequency of 16 2/3 cycles. The current is delivered directly to the contact line at the power stations and also to 11,000 kva. transformers which step the voltage up to 60,000 volts to transmission lines which take it to the various sub-stations. At present it is necessary to mix electric traction with steam traction between Biasca and Bellinzona, and until it is possible to discontinue this practice, the tension on the contact line will be maintained at 7,500 volts.

The Amsteg power station uses the fall of the Reuss river. A pressure tunnel, 4½ miles long, conveys the water to a

water chamber 920 ft. above the power house. The average minimum output during the three winter months is 12,000 hp. at the shaft of the turbines. Water wheels aggregating a total of 60,000 hp. will be installed at first and later increased to 90,000 hp. The Amsteg power station should be ready for service early in 1922, and as soon as it is put in operation the Ritom station will be practically idle in the summer, thus allowing a large volume of water to accumulate in Lake Ritom, while Amsteg, due to the immense flow of the water in the Reuss river during the summer months, will

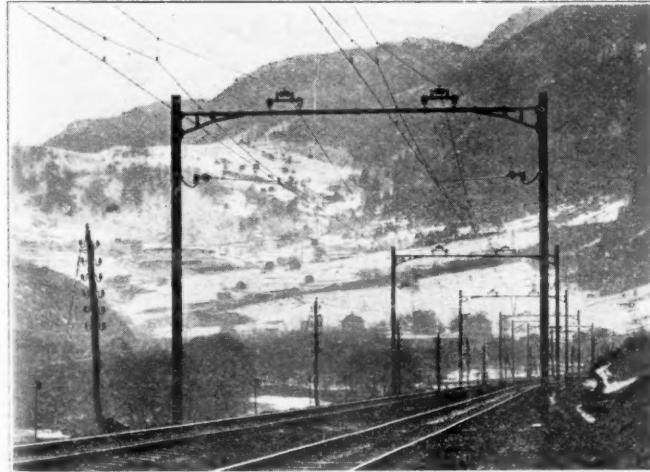


The Amsteg Power Station Under Construction. Photograph Was Taken in November, 1920

be able to generate all the power that is needed to run all trains over the St. Gotthard line. During the three winter months the Amsteg station will have its output limited to 12,000 hp. and Ritom will be able to satisfy the balance of the power demand by drawing on the water accumulated in the lake during the summer months.

Transmission Lines

From the power stations the power is transmitted over 60,000-volt transmission lines to the sub-stations. Between



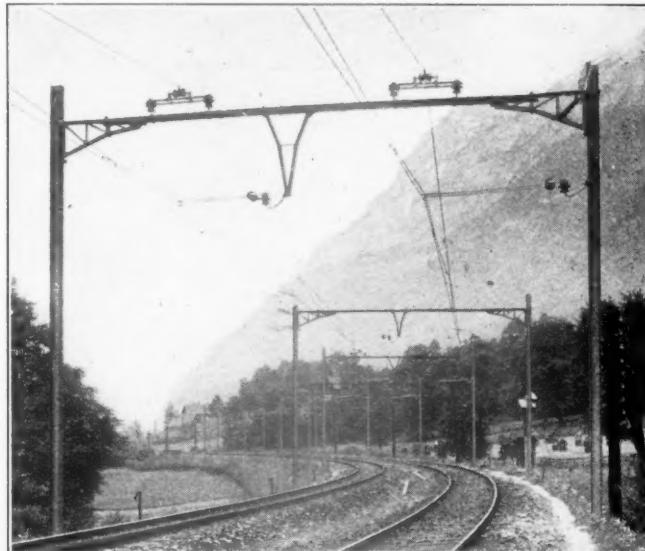
Catenary Construction on Tangent Track

the Ritom power station and the sub-stations of Goeschenen and Giornico these transmission lines are built as underground cables. As the middle point of the transformer high tension winding is grounded, the tension between each conductor and ground is only 30,000 volts. The cables are insulated to stand 30,000 volts in normal service. Before they are laid they are tested with 90,000 volts. At present

there is only one two-conductor transmission line consisting of two cables of 135 sq. mm. copper cross-section between Ritom and Goeschenen and two lines consisting of four cables of 120 sq. mm. cross-section each between Ritom and Giornico. A second line between Ritom and Goeschenen and two lines between Amsteg and Goeschenen are being installed. Each of the cables used in these lines has a cross-section of 135 sq. mm.

The 30,000-volt cables are placed on the right of way in concrete channels. Junction boxes are placed in the concrete channels at intervals of about 1,600 ft. for the purpose of making splices in the cable. In the St. Gotthard tunnel the cables are laid in reinforced concrete channels that are attached to the side wall of the tunnel at a height of 4 ft. 11 in. above the top of the rail. The channel supports are placed at intervals of 10 ft. 9 in. The insulation of the cables consists of specially impregnated Manila paper, which is covered by a lead sheath 3 mm. thick, which in turn is enclosed in a jute wrapper.

From the Giornico sub-station to the south and from Amsteg to the north the transmission lines are aerial. The line to the sub-station of Giubiasco is now ready for service and the line further south to the sub-station of Melide will be completed by the end of this year. For the greater part



Catenary Construction on Curve. Supporting Bridge in Foreground. Second Bridge Is a Pull-Off

of the distance these lines parallel the track at a distance of 66 ft. and consist of 4 copper strands of 100 sq. mm. cross-section. The average distance between poles is 262 ft. A ground wire consisting of a $\frac{1}{2}$ in. galvanized steel strand is strung over the top of the poles. The transmission lines from Amsteg to the north will be built during the coming summer and fall and should be ready for service early in 1922. It will connect the Amsteg power station with the sub-station at Steinen.

Sub-Stations

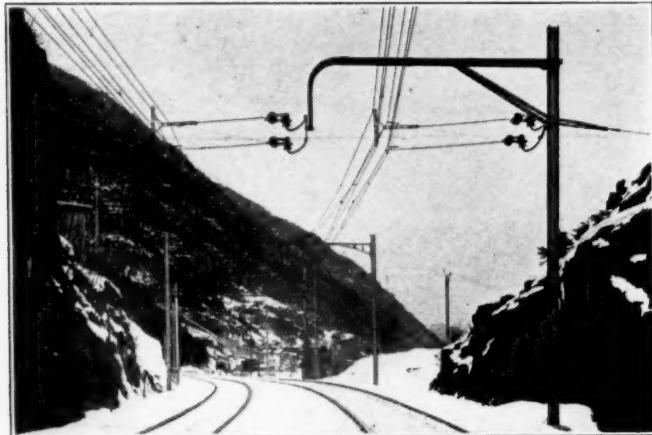
There are five sub-stations in all. The sub-stations of Goeschenen and Giornico are already in operation, the sub-station of Giubiasco is about completed and the sub-stations at Melide and Steinen will be put in service at the end of this year. In the sub-stations the single phase current from the power stations is transformed from 60,000 to 15,000 volts and delivered to the contact line. The sub-stations of Goeschenen, Giornico and Giubiasco are built for the installation of three transformers of 5,000 kva., continuous rating, but only two will be installed until the traffic demands

a third. The sub-station at Steinen will be equipped with three and later on with four transformers of 5,000 kva. capacity.

The Contact Line

The contact line is built as a catenary. Over the main line track it consists of a No. 0000 hard drawn copper contact wire, a $\frac{1}{2}$ -inch 19-strand galvanized iron auxiliary messenger and a $\frac{1}{2}$ -inch 7-strand galvanized iron messenger wire. The contact wire is suspended from the auxiliary messenger at intervals of 23 ft. and the auxiliary messenger is supported from the messenger by hangers placed at intervals of 92 ft. The bridges which support the messenger are spaced 184 ft. apart. At these bridges the contact wire and auxiliary messenger strand are held in their position, relative to track, by a special pull-off construction. On curves with radii less than 2,950 ft. the contact wire, the auxiliary messenger and the messenger are pulled off in the middle of the span. The span of 184 ft. was chosen because it was found the most advantageous one with respect to the many curves and because of the small width of the pantograph shoe made necessary by the form of the tunnel. On adjoining lines, where curves are less frequent, the length of span will be 197 ft.

The maximum tension of the contact wire at the lowest



Catenary on a Curve Showing Another Type of Pull-Off Construction (See Preceding Illustration)

temperature reached in winter is 883 lb. At the highest temperature in summer, this tension goes down as far as 530 lb. With the greater number of catenary systems used in Europe, a constant trolley wire tension is obtained by tension weights used to suspend the contact wire at various points of the line. No tension weights are employed in the construction of the catenary on the St. Gotthard Railroad and much care has been taken to obtain a perfectly level contact wire, as the pressure of the pantograph shoe is kept at only $5\frac{1}{2}$ lb.

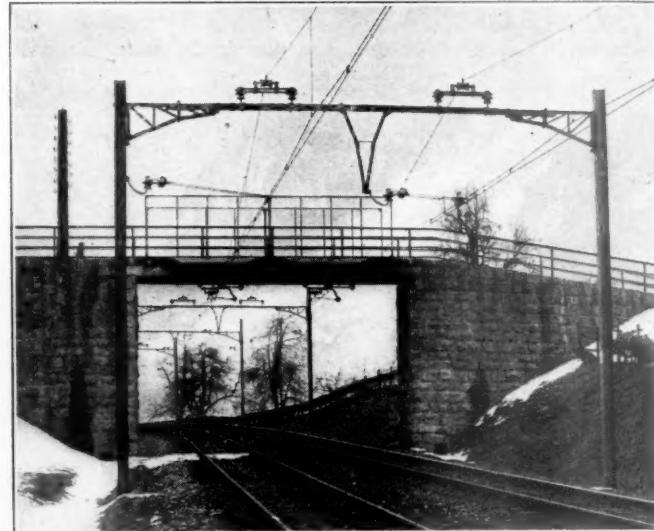
In the tunnels the auxiliary messenger is replaced by a copper wire that is mounted close to the main contact wire. The messenger is replaced by a copperclad steel wire that has a copper cross-section of 28 sq. mm. and a steel cross-section of 28.5 sq. mm. The messenger is supported by special frames, which are about 82 ft. apart.

The height of the contact wire above the top of the rail at the highest temperature is 18 ft. on the open line, 19 ft. at highway crossings and 20 ft. in stations. The total difference in height, on account of temperature change, is 1.5 ft. In tunnels and under low bridges the height above the top of rail is 16 ft. at all temperatures.

The contact line is insulated with a double insulation that consists of two pin-type and one spool-type insulator at all points where the messenger strand is supported. At pull-off points the insulation consists of one pin and one spool-type

insulator. On account of the limited space in tunnels it was impossible to install double insulation. As a substitute a pin-type insulator of especially heavy design is used. All of the insulators used have a cylindrical section which makes it possible to use them with a sturdy type of insulator support or armature.

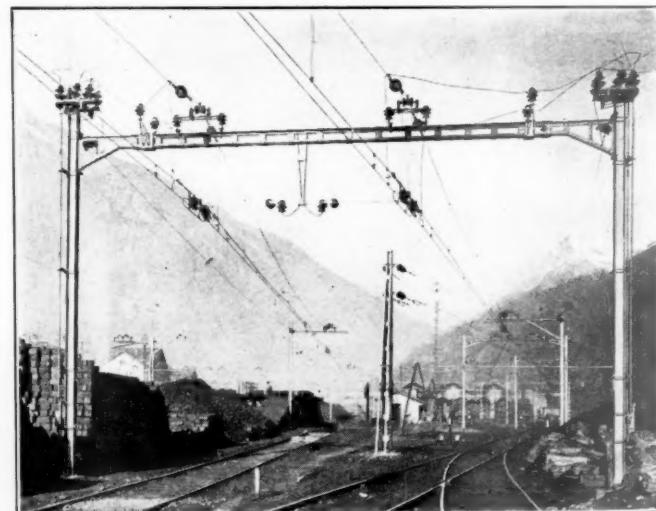
The yard tracks are equipped with a contact line which



Special Contact-Wire Support and Protective Devices Are Used on Highway Bridges

consists of the contact wire 70 sq. mm. cross-section, of a $\frac{3}{8}$ in. 19-strand galvanized iron auxiliary messenger and a $\frac{3}{8}$ in. 7-strand galvanized iron messenger.

The pole lines on the open line between Erstfeld and Bellinzona are made of H-beams, 8 in. wide. Between Bellinzona and Chiasso and between Erstfeld and Lucerne structural steel poles are used which have the same mechanical



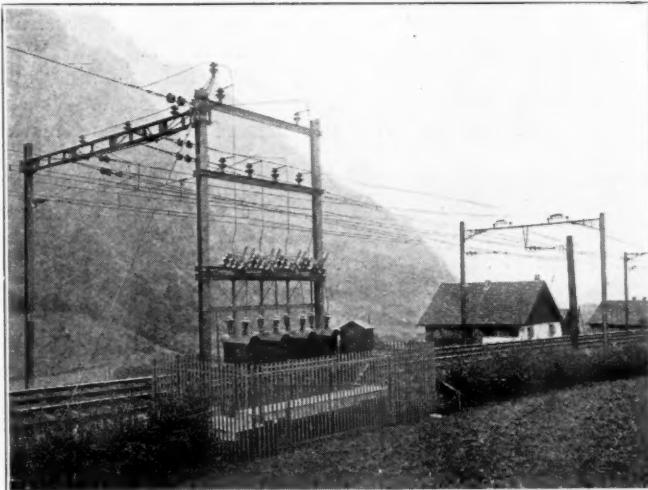
Sectionalizing Insulators and Circuit Breakers on Pole in Yard Catenary Construction

strength. The yokes between the poles are made of two "T's" or of four angles. Structural steel poles are used in the stations with rigid steel cross-spans. All insulator supports and all bolts and small parts for the contact line are heavily galvanized.

Section insulators and switches are so located that all the tracks in a station can be disconnected from each other and so that all of the main line tracks between any two stations

can also be disconnected from the rest of the system. There are no feeders along double track lines, but feeders are provided on single track lines for continuity of the circuit while repair work is being done on the contact line.

The different sections of the contact line are connected by oil circuit breakers. Four of these circuit breakers are located



Sectionalizing Switches Used to Disconnect the Catenary Over the Station Tracks from the Main Line Catenary

at either end of every station. When all of the lines are in service, the contact line transmits the current through the stations to points farther away from the feeding point. Each station is provided with a special jumper line that goes around the station and maintains continuity of the circuit when the lines in the station are disconnected.

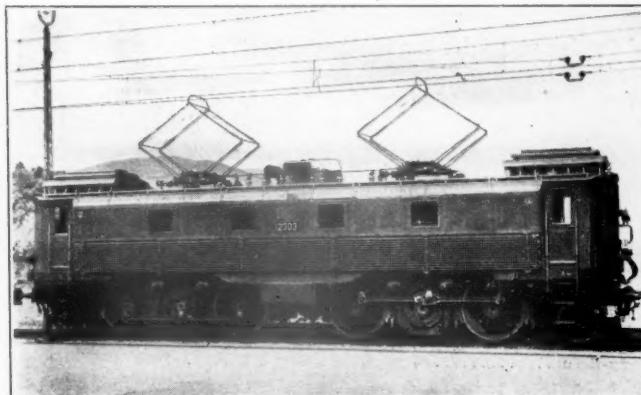
Telegraph and Telephone Lines

All of the telegraph and telephone lines in Switzerland not owned by the railroads are owned by the government and it is common practice to run both government and rail-

road telegraph and telephone lines along the railroad right of way. As many of these lines use a grounded return, it is not possible to have them on the right of way of an electrified road because of the noise caused by inductive interference and the danger of actual physical contact with the overhead system of the electrified railroad.

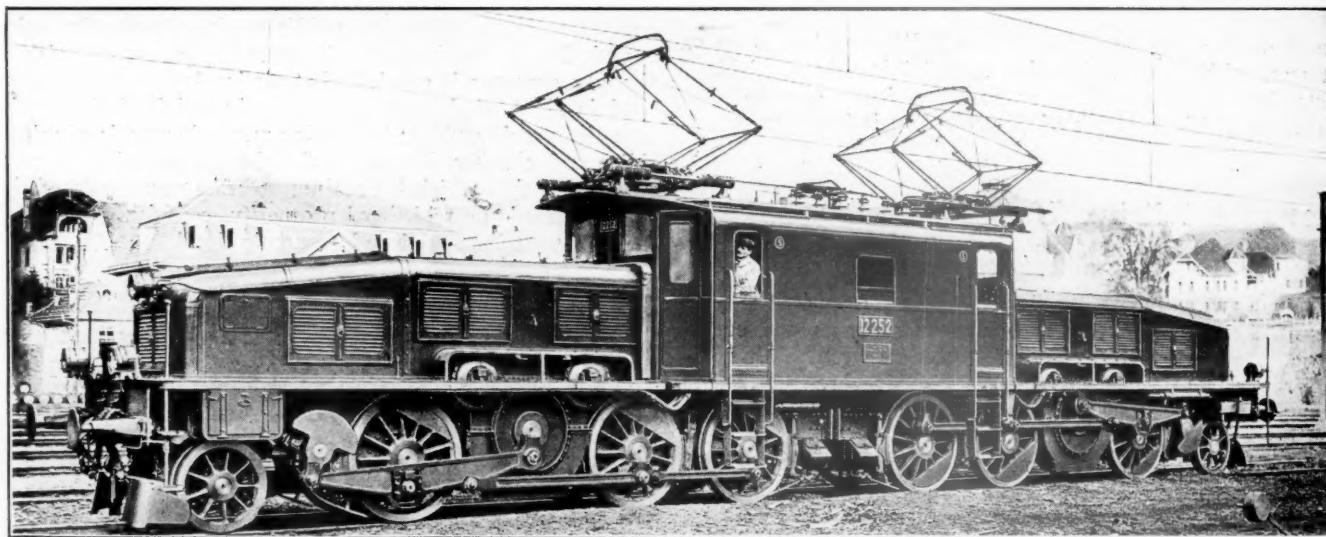
Locomotives

When a decision was reached to electrify the St. Gotthard line, it was planned to obtain trial locomotives as soon as



Electric Passenger Locomotive

possible and to test them out on the Loetschberg Railroad for the purpose of finding out which type was the best suited for the St. Gotthard line. The war also delayed the delivery of electric locomotives for the test, and for this reason the locomotives for the St. Gotthard line had to be ordered before the trial locomotives had been delivered and tested.



Electric Freight Locomotive

road telegraph and telephone lines along the railroad right of way. As many of these lines use a grounded return, it is not possible to have them on the right of way of an electrified road because of the noise caused by inductive interference and the danger of actual physical contact with the overhead system of the electrified railroad.

At the present time there are about 30 locomotives in service, 15 of which are freight and 15 passenger locomotives. The data for the two types are given in Table 1.

The coal situation, often referred to as the coal misery, reached its climax in 1918 and taught Switzerland to consider steam railroad electrification as a vital as well as an economic problem. With the high prices being paid for coal,

many roads could probably show considerable saving if electrified, but more than this it was desirable to maintain the continuity of traffic and not be dependent upon the good will

TABLE 1		
	Passenger locomotive	Freight locomotive
Type	2-4-4-2	2-6-6-2
Continuous rating (hp.)	1650	1825
One hour rating (hp.)	1800	2250
Drawbar pull (continuous)	20,000 lb.	26,000 lb.
Drawbar pull (one hour)	23,000 lb.	37,500 lb.
Speed	47 miles per hr.	40 miles per hr.
Length over all	54 ft.	636 ft.
Diameter of driving wheels	60.2 in.	53.2 in.
Gear ratio	1:3.5	1:4.03
Weight of mechanical parts	59.3 tons	72.0 tons
Weight of electrical parts	47.3 tons	56.0 tons
Total weight	106.6 tons	128.0 tons
Weight on drivers	76.8 tons	103.9 tons
Electric parts made by	Brown, Boveri & Co.	Maschinenfabrik Oerlikon
Mechanical parts made by	Lokomotivfabrik Winterthur	Lokomotivfabrik Winterthur

of foreign countries for coal. These were the primary reasons for deciding on a program for the electrification of all of the lines of the Swiss Federal railroads, and a decision has been reached not to wait for the completion of the electrification

TABLE 2			
LINES ELECTRICALLY OPERATED			
Lines	Length of line	Year operation was started	Kind of power used
Brig-Iselle (Simplon tunnel)	13.7 miles (single track)	1905	Three phase 3000 volts freq. 16½
Brig-Sitten	35 miles (partly double track)	1919	As above
Thun-Bern	20 miles (double track)	1919	Single phase 15,000 volts freq. 15
Erstfeld-Biasca	56 miles (double track)	1920	As above but freq. 16½
LINES BEING ELECTRIFIED Time work will be finished			
Lines	Length of Line	be finished	Kind of power used
Biasca-Bellinzona	12.5 miles (double track)	Apr., 1921	Single phase 15,000 volts freq. 16½
Bellinzona-Chiasso	34 miles (double track)	End, 1921	As above
Erstfeld-Lucerne	37.3 miles (partly double track)	Apr., 1922	As above
Goldau-Zug	12 miles (single track)	Apr., 1922	As above
Lucerne-Zug-Zuerich	28.3 miles (partly double track)	End, 1922	As above
Sitten-Lausanne	60 miles (double track)	Aug., 1923	As above

work on the line from Erstfeld to Bellinzona but to go on at once with the electrification of adjoining lines. Table 2 lists the Swiss Federal roads now electrically operated and those on which the work of electrification is in progress.

Senator Elkins Urges Public to Buy Coal Now

"HOW TO BREAK the 'buyers' strike,' if such it may be called, affecting the coal industry is one of the grave and immediate problems confronting the government in its executive and legislative branches," said Senator Davis Elkins, of West Virginia, in a statement to the press.

"Sudden restoration of a market, and an attempt to crowd the hauling of the bulk of the nation's coal in the fall and winter months, will place upon the railroads a burden which they are admittedly unable to adequately discharge. That will simply mean a repetition of the so-called 'coal famine' of last year, which was *per se* a car famine."

"It is proposed in bills before Congress to induce the public to lay in its fuel supply in ample season by authorizing and directing a reduction of seasonal freight rates on coal. That idea put into practice might prove effective. If it should, it is hardly likely to meet the present critical situation with the desired promptness. That help would be likely to come rather late."

"Under existing freight rates and scales of miners' wages, the prices for soft coal are as low now as they are likely to be. They are less than those established by the late fuel administration, which allowed, according to Dr. Garfield, an average profit of 46 cents the ton.

"Since then, during 1920, the miners secured an increase in two installments of 47 per cent, which increase was written into the present wage scale under government supervision, and which scale has until April, 1922, to run.

"It is therefore useless to hope for a reduction in wages as an aid to lower soft coal prices this year. Wages and freight rates are the main supports of the present market prices.

"Since 1914 the soft-coal industry has had to sustain six successive increases in wages. These increases have added, it is estimated, \$1.70 to the cost of each ton. On a yearly production of 550,000,000 tons, this would represent an increase of \$935,000,000 in wages alone over what it cost to produce soft coal before the war.

"Freight rates have approximately doubled since 1914. Where the average freight rate was about \$1.50 a ton in pre-war days, the average rate now, so far, is about \$3 a ton. For long distances from the mines the freight rates run much higher than \$3 a ton.

"The increase of \$1.50, applied to a yearly production of 550,000,000 tons, represents an advance in the cost of soft coal to the consumers and the country over on account of freight rate charges, of \$825,000,000.

"Taken together, advances in wage scales and in freight rates since 1914, it is estimated, have added \$1,750,000,000 to the yearly coal bill of the nation.

"The conclusions to be drawn from the foregoing are that (1) the wage scale stands until April, 1922, a scale written under government supervision, if, indeed, not by government direction; (2) that any reduction in freight rates on coal is likely, if it comes and when it comes, to be too late to correct the present situation before the damage has been done; and (3) that the grave concern felt by the officials of the government over coaling the country for next fall and winter is abundantly justified.

"The public's interest and concern in this matter are second to no other. What the public needs is to clearly understand that by holding off it is assuming too great a risk on its own account; is unwittingly contributing to the vexations and burdens of the railroads, already weighted down with vexations and troubles; is keeping many thousands of miners idle, and causing distress to the dependents of these men, and doing that which it does not at heart want to do—helping to retard the rebirth of prosperity, confidence and optimism in our industrial and economic life."

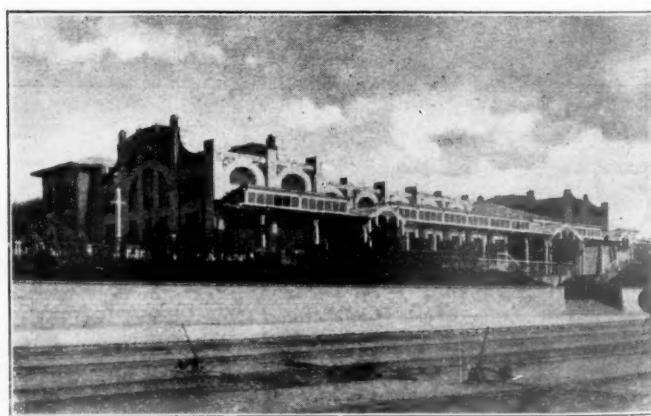


Photo by Keystone

The Trans-Siberian Station at the Russia-Manchuria Border

Carriers Answer Lauck's Charges Before Board

Railroad Representatives Close Testimony in Wage Case With Reply to Employees' Exhibits

DECLARING the voluminous exhibits submitted to the Railroad Labor Board by W. Jett Lauck to be irrelevant, fallacious and having no foundation in fact, representatives of eastern and western carriers on May 7 completed presentation of the railroads' plea for wage reductions. The last two days of hearings in the case were given almost wholly to an attack upon material prepared by Mr. Lauck as a "consulting economist" for the labor organizations. The attack was made by J. G. Walber, speaking on behalf of the eastern roads; F. W. Sargent, general solicitor of the Chicago & North Western, speaking for the North Western and for the western roads; R. M. Shaw, general counsel of the Chicago Great Western, speaking for six presidents of western roads, and E. H. Senneff, general counsel of the Pennsylvania.

The statement read by Mr. Shaw on behalf of the western roads was signed by Charles H. Markham, president, Illinois Central; Hale Holden, president, Chicago, Burlington & Quincy; H. E. Byram, president, Chicago, Milwaukee & St. Paul; W. H. Finley, president, Chicago & North Western; J. E. Gorman, president, Chicago, Rock Island & Pacific; S. M. Felton, president, Chicago Great Western, and W. B. Storey, president, Atchison, Topeka & Santa Fe, and said in part:

For some weeks Mr. Lauck has been presenting to the Labor Board and giving to the press statements charging that large amounts of money are being wasted in the financial and operating management of the railroads. These statements have no relationship to any question before the Board, or which it has authority to determine. The Board itself has expressly stated that the Interstate Commerce Commission is the only federal body having authority over the general management of the railroads, and that the Board has authority only to fix reasonable wages and working conditions.

The sole purpose of these statements is to divert public attention from matters actually pending before the Board. They are bald propaganda intended to discredit private management and promote the Plumb plan. We respectfully protest against the Board continuing to allow hearings before it to be made a means of spreading this propaganda.

Since these statements have been permitted to be presented to the Board, we call your attention to the fact that in addition to being irrelevant, they are gross misrepresentations of the management of the railways and that their tendency and purpose is to mislead the public regarding the actual facts as to both railway management and railway regulation. We shall briefly point out a few of these misrepresentations to illustrate the true character of all of them.

1. It is charged that in various ways the capitalization of the railways has been made excessive and that in this way a burden has been imposed upon the public. We deny that the capitalization of the railways as a whole is excessive. Even if it were, this would have no effect on passenger and freight rates, since the Transportation Act and the Interstate Commerce Commission, in carrying it out, have specifically based the rates upon a valuation made by the Commission itself.

2. It is charged that the railways and concerns from which they buy fuel, materials, supplies and equipment are under the same financial control, and that, in consequence, the railways pay excessive prices to these other concerns. Every railway buys fuel, materials, supplies and equipment from literally hundreds of different coal, iron and steel, lumber and equipment companies all over the country, and the charge that the railways and all these concerns are under the same financial control is absurdly untrue. Even if they were under the same financial control, this would not prove that the railways pay excessive prices, and indisputable facts regarding almost innumerable transactions of the purchasing departments of the railways could be presented to show that they do not, and have not, paid higher prices than other purchasers of the same things. Absolutely the only evidence purporting to support this charge is that the railways paid high prices last year for having a very small part of their locomotives and cars repaired

in outside plants. Any fair comparison of the prices paid for these outside repairs, and what it would have cost to have made them in railway shops, will prove that the prices paid to outside plants were not excessive. Furthermore, the only reason why the railways had these repairs made in outside plants was that their own shops were unequal to the demands upon them at the time.

3. It is charged that the railways have wasted immense sums by not "modernizing" their locomotives. Figures given by Mr. Lauck himself show, however, that improved devices have been installed with remarkable rapidity on locomotives within the last ten years, considering the difficulties the railways have had in raising capital for improvements. Mr. Lauck's inconsistency is shown when he charges the railways have not sufficiently improved their locomotives, says at the same time that they have greatly increased their average tractive power, and then criticizes them because they have not fully utilized this increased tractive power. The best measure of the increase in the service obtained from locomotives is the average trainload. The average trainload of the western railways in 1915 was 393 tons, while in 1920 it was 643 tons, an increase of 61 per cent. No better evidence could be cited than these figures of the increase in the efficiency with which locomotives have been used, and in general operating efficiency.

4. Mr. Lauck criticizes the railways for many other alleged wastes which, even if proven to exist, could be remedied only by making great improvements in the physical properties. These improvements could be made only by the investment of large amounts of new capital. This new capital could be obtained only if the railways were enabled to make enough net operating income to pay a return upon it. The railways are trying to increase their net operating income by the only means immediately available—that is, by reducing their excessive operating expenses—and in this effort almost the only opposition they are receiving is from the labor leaders that Mr. Lauck represents. Within recent months the prices of everything the railways buy except labor have been reduced.

5. Among the items of alleged "waste" Mr. Lauck mentions loss and damage. In 1917, the last year before government control, payments for loss and damage to freight were only \$35,000,000. In 1919, after two years of government control, this had increased to \$106,804,000, or 205 per cent. Mr. Lauck defends unified government control, but fails to point out that such a large saving in this item is possible because it was so increased under government control. He also fails to mention that since the railways were returned to private operation the American Railway Association has been carrying on a campaign to reduce loss and damage 50 per cent, which already is beginning to meet with great success.

6. It is claimed that while the managements have been inefficient, the "productive" efficiency of the employees as measured by the amount of traffic handled per employee has increased. This claim is in direct contradiction of the facts. In 1916 the number of ton-miles of freight handled per employee was 243,218 and in 1917 250,997. The latter was the highest figure ever reached. In 1918 the average ton-miles per employee was only 241,541 and in 1919 only 208,026. In 1920 it had increased to 221,921. It declined under government control and increased under private operation in 1920, but even in 1920 was much less than that in 1916 or 1917.

When the railways were still handling a large business, their operating expenses were running about \$6,200,000,000 a year, of which about \$4,000,000,000 was going to labor. Mr. Lauck has estimated that the railway managements have been "wasting" \$2,500,000,000 a year, while B. M. Jewell, head of the Railway Employees' Department of the American Federation of Labor, has completely outdone Mr. Lauck by estimating that in various ways there could be made economies amounting to over \$3,376,000,000 a year. At the same time, both Mr. Lauck and Mr. Jewell contend, first, that the railways have not been justified in laying off employees, and, secondly, that there is no justification for any reductions in wages. The necessary effect of these contentions is that there is no justification for any reduction in the payroll. When they claim that from \$2,500,000,000 to \$3,500,000,000 a year could be saved by better management, and at the same time contend that there should be no reductions in the payroll, the inconsistencies and baselessness of their propaganda becomes apparent.

The railway managers are trying to reduce operating expenses through changes in rules and working conditions and reductions in wages which they believe will be just to the public, the railways and the employees in view of the changes in conditions which

recently have occurred. They are also making the utmost efforts to effect every other economy that is practicable under present conditions. They realize that if they could raise sufficient new capital to make needed improvements in the properties they could effect very large economies by reducing the amount of labor, fuel and materials used. Until, however, they are allowed to earn enough net return to enable them to raise the new capital for these improvements, the large economies that could be effected through these improvements must remain in abeyance.

In the hearings on the railroad situation soon to be held before a Senate committee in Washington the subject of railroad management will be fully investigated, but we have felt that since charges of mismanagement having no relation to any matter pending before your honorable Board continue to be made day after day in statements before your Board, we could not, in justice to the properties we represent, refrain any longer from calling attention to the irrelevancy, inconsistency and baselessness of these charges and the purposes for which they obviously are being made.

J. G. Walber Analyzes Lauck Exhibits

Mr. Walber's analysis dealt largely with the alleged "economies" which Mr. Lauck has maintained should be placed in effect before reductions are made in the payroll.

With respect to alleged possible economies amounting to \$2,026,355,000, through the use of various mechanical appliances and in general the revamping of all facilities and equipment, Mr. Walber said:

Notwithstanding the railroads have been using such devices, treated ties, etc., upon which so much stress is laid, the operating results and the ratio of operating expenses to gross earnings do not reflect economies capable of being measured to any extent as claimed, nor does the experience of the railroads justify estimates of economies of the magnitude represented.

Since these total economies (\$2,026,355,000 as stated by Mr. Lauck) amount to more than one-third of the total operating expenses, it is reasonable to assume that economies would be effected in expenses for labor and material in the same proportion that these items of operating expenses now bear to the total operating expenses. At the present time expenses for labor approximate 60 per cent of the total operating expenses. It is, therefore, reasonable to assume that 60 per cent of the savings claimed would have to be savings in labor, which would mean the reduction of 668,000 employees based on the number in service in 1920.

Referring to one of Mr. Lauck's statements headed "Immediate Savings" amounting to \$272,500,000 covering economy devices for locomotives, he stated:

Granting that expenditures for such devices were justified, it must be manifest that it would be wholly impracticable within any brief period of time which would justify the statement that they would be "immediately available" and the management of any railroad that followed this suggested practice could not survive the test of the Transportation Act as to honest, efficient and economical operation.

With reference to an alleged saving of \$50,000,000 a year through freight handling at terminals, Mr. Walber said:

This allegation is purely hypothetical and based on someone's estimate of a total possible saving of \$350,000,000 at all points in the United States on railroads and steamships. The railroads have been alive to this for years and are constantly studying the situation, adopting, where found practicable and economical, such mechanical devices and other means as will reduce the cost of operation.

Referring to alleged savings on shop cost accounting, he said:

There is nothing in this statement which indicates that such a saving is possible; it is merely an assertion that if 1 per cent can be saved it will amount to so much money. The roads have pointed out that while time studies are a prime essential in any proper system of shop accounting, nevertheless during Federal control the railroads were met with threatened strikes or actual strikes because they used such methods after piece work had been abolished and were then instructed by the United States Railroad Administration to discontinue such accounting methods.

With respect to other accounting economies alleged to justify a saving of \$50,000,000, Mr. Walber said:

A casual consideration of the factors entering into this cost will demonstrate how little reliance can be placed thereon, and in addition we merely call attention to the fact that as one saving

they point out the desirability of introducing systems which require largely increased accounting and statistics and in another exhibit show how accounting and statistics should be curtailed.

Referring to the roads' alleged failure to utilize modern labor saving devices for office work, Mr. Walber said:

In this instance, as in practically all the other allegations, they are purely visionary and evidently prepared without any knowledge whatever of the actual conditions.

It is also noted that an alleged saving of \$40,000,000 per year would be accomplished by the elimination of labor turnovers. This estimate is the personal estimate of an individual and, from the way it is used, it is assumed that turnovers can be eliminated. The fallacy of such an assumption is apparent.

In connection with the alleged possible annual saving of \$100,000,000 for tie renewals, Mr. Walber stated in part:

It is estimated that to install a plant capable of treating 1,000,000 ties per annum would require approximately \$500,000. Any railroad which would undertake this installation would have to provide this capital and assume the interest, depreciation, maintenance of the plant and cost of treating ties over a period corresponding with the life of the untreated ties before any benefits would accrue. Again, it should be understood in treating ties it is only done to protect them against decay, and for this reason only certain kinds of wood are treated.

In reply to charges of financial mismanagement of the railroads, Mr. Sennett said in part:

Railroad capitalization has no effect whatever on railroad wages or rates. If any of the transactions to which reference is made have proved unjustifiable in the past they have received public condemnation and the bad results have been borne by the investors and not by the employees or the public using the railroads. Wages have been determined and will hereafter be determined irrespective of any railroad's capitalization.

Therefore, as neither railroad valuation rates nor wages have been gaged by stock or bond issue of any single railroad company nor of all the railroads, as no individual company is assured any return upon the value of its property as found by the Commission, the attempt to introduce these irrelevant matters growing out of transactions in the past years conduces only to confusion and beclouds the whole issue respecting just and reasonable wages.

It was also pointed out that the right of the railroads to apply surplus earnings to betterments and subsequently capitalize them is a method of financing that has been universally approved in this country and has been largely responsible for the efficient transportation system that the country enjoys; that it has stood the test of Public Service Commission, the Interstate Commerce Commission and the Supreme Court of the United States; that there is no possible danger in the future of overcapitalizing in this method of financing; and that the valuation work undertaken by the Interstate Commerce Commission even now proves conclusively that the value of the assets of the road far exceeds capitalization.

The respondents criticized many of the railroads because they have sold their stock for par value instead of market value. Again we insist that this specious argument really has no place in this hearing. Sufficient to say, however, that the principle of attempting to issue new stock in any amount at existing market is unsound. The effect of a new issue on the market is generally an immediate depreciation in price and the governments of the world and municipalities cannot escape this law of supply and demand. What has been said respecting the sale of stock applies generally to the sale of bonds. Bonds are sold to best advantage after careful consideration of all factors after ascertaining what the public is willing to pay.

A great deal is said in respondents' exhibits about interlocking directorates of the railroads and corporations with which they have business transactions. Respondents are attempting to create the impression that because of these interlocking directorates some great wrong is being done to the public and to the railroads themselves, which claim cannot be supported.

In fact, it has not been shown that such transactions have resulted in any injury to the public or to the railroads. However that may be, the contention is completely answered by the fact that such transactions are now governed by the provisions of the so-called Clayton Act, so that once paraphrasing Mr. Lauck, this is "water over the dam," and may be dismissed at this time without any further discussion as wholly irrelevant and immaterial in so far as this hearing is concerned.

May 13, 1921

RAILWAY AGE

1115

F. W. Sargent Continues**Bombardment of Lauck Exhibits**

Mr. Sargent followed with another broadside at Mr. Lauck's case, stating at the outset:

We have accepted it as fundamental for the purpose of this case that Decision No. 2 fixed just and reasonable rates of pay. That Congress directed this Board to adjust wages when disputes arose from time to time, having in mind, first, wages in other industries, and, second, cost of living, and thereafter the other five elements named in Section 307.

Mr. Lauck asks the Board to abandon the specific directions given to it by Congress in Section 307 of the Transportation Act. He in effect asks the Board to first create an artificial condition by the establishment of some standard of living which may meet the Board's conception of what the standard for every class ought to be, and, second, compel the transportation industry to pay wages that will support such a standard regardless of the productivity of the employee and regardless of the ability of the industry to maintain the standard thus set up. Realizing that the scale of wages is now so high that common carriers cannot continue to meet it, Mr. Lauck then proceeds to justify his theory upon two general propositions. First, he says that the railway employees did not receive all they were entitled to during Federal control and that, therefore, the corporations should now be compelled to continue the present scale in order to reimburse railway employees for their failure to receive their advances. In the second place, he claims that the railway companies prior to Federal control had been guilty of financial mismanagement, that they had in a large measure, through such mismanagement, destroyed their credit, had failed to make proper and essential improvements which would produce enormous economies, and on this account have placed themselves in a position where they are unable to continue the present scale of wages and at the same time take care of their other operating expenses, taxes and fixed charges. That in view of this prior financial mismanagement the roads should not now ask the employees to bear any portion of the present depressed conditions, but should continue to pay wages which the traffic will not bear and which are bound to result in bankruptcy for most of the properties.

If this Board is to set up a standard of living for railway employees and fix wages to support such a standard, regardless of the effect upon the ability of the employer to meet the same, then it will of necessity impose a greater burden upon all other classes of industry and all other classes of labor than is warranted or contemplated by any theory thus far announced in the Transportation Act. When you suddenly call upon the transportation systems of the country to pay a level of wages that traffic will not bear, then you ask all other industries responsible for the payment of freight and passenger rates to support a transportation expense that of necessity forces a reduction of wages in other industries or a suspension of business, with the consequent loss of employment for employees in other industries.

It is not an answer to say that the income of railway companies may be fixed by law through the establishment of rates, for there is no law that will support the payment of rates higher than the traffic will bear, and if the present scale of wages is to be continued then it can be readily seen by the most casual observer that one of two things must happen. Either the volume of traffic must increase even beyond that of any business ever heretofore conducted by the carriers in the country or there must be still a further increase in freight and passenger rates.

If this Board is to set up a standard which meets its own judgment as to the so-called living wage for the family of five, as urged by Mr. Lauck, and if this is to be the basis of wage adjustments rather than the items mentioned in the Act of Congress, it follows, as a matter of course, that the Board should fix a different standard for different sizes of families and for individuals. The statisticians have taken the family of five because it is said to be the average family, but the average family has more than one producer. We are, therefore, asked to pay a wage to the breadwinner in the family or ten or to the unmarried man or woman with no family, based upon the so-called living wage for the family of five. The very statement of the proposition illustrates how impracticable it is to apply the theory. You fix, for instance, the so-called living wage for the family of five as the basis to guide your deliberations, and that compensation would be wholly unnecessary for thousands of employees in the railway service, such as young clerks, unmarried men and women, including the large number of employees in extra gangs for section labor, etc.

I am not prepared to admit that, in view of the changed conditions, the wages we are contending for would not afford living wages to the various employees falling within the respective classes under consideration. I maintain that if the decision of this Board was just at the time it became effective, May 1, 1920, then it follows that a reduction in the various scales of compensation

must be granted at this time in view of the overwhelming evidence regarding changed conditions with reference to the scale of wages in outside industries and with reference to the cost of living.

The railway companies are dependent upon competitive industrial and economic conditions for the successful operation of their properties. They may not make up deficiencies and pay the obligations of the federal government through the processes of taxation, as the government was and is prepared to do from time to time. We cannot draw upon the public treasury to make good the shortages in operation costs. It is quite impossible for me to conceive upon what theory it is now claimed that wages should be maintained at an abnormal level by railway companies and on a basis which traffic will not bear for the purpose of paying an obligation which it is claimed the government owed to its employees and which the government would have to meet, if at all, through the process of taxation.

The logic of Mr. Lauck leads to the absurdity of saying that we must now pay wages which the traffic will not bear and thus continue to impair railroad credit in an effort to re-establish railroad credit for the purpose of making the alleged deferred improvements which will enable other operating economies that will in turn make it possible to pay his scale of compensation.

Mr. Sargent then analyzed the various "economies" suggested by Mr. Lauck and concluded his remarks on this subject by saying:

All these estimates are based upon theories mostly by experts who have never had upon their shoulders the responsibility of the payroll and the financing of great industrial undertakings. Mr. Lauck is dealing in theories characteristic of one who indulges only in statistics and is not charged with the responsibility of management which must secure practical results.

Later, in taking up the charges of financial mismanagement, Mr. Sargent showed that in so far as the Northwestern was concerned, Mr. Lauck's charges were not based on facts and were wholly misleading and unsound.

Mr. Walber followed with another attack upon the "living wage" theory capitalizing the impracticability of applying such a theory to the transportation industry.

Employees Complete Testimony**Against Wage Reductions**

The Board's sessions on May 4 and 5 and half of the session on May 6 were given to representatives of the employees for the completion of their testimony. On May 4, Mr. Lauck continued the presentation of his exhibits, filing many volumes of opinions and statistics in an attempt to prove his contention that the establishment of a "living wage" was the problem before the Board, that neither the cost of living nor the wages paid in outside industry have declined and that the present depression is temporary. In addition he attacked the data presented in this case by the railroads as inaccurate and misleading.

G. W. Eastty, vice-grand president of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, and E. F. Grable, grand vice-president of the United Brotherhood of Maintenance of Way Employees and Railroad Shop Laborers, also presented short statements on behalf of their organizations.

On May 5, B. M. Jewell, president of the Railway Employees' Department of the American Federation of Labor, speaking on behalf of the Federated Shop Crafts, reiterated with some embellishments the contents of Mr. Lauck's 51 exhibits. L. E. Sheppard, speaking on behalf of the train service employees, urged the Board to ignore the necessity of the railroads for immediate relief and make its award only after careful deliberation. W. S. Stone, head of the Brotherhood of Locomotive Engineers, spoke on behalf of a "living wage" based on American standards and not on the standard of living maintained by the Mexican or other foreign laborers on American railroads. The cost of living should not be a factor in the determination of wage scales, he contended.

W. S. Carter, president of the Brotherhood of Locomotive Firemen and Enginemen, and Captain J. J. Scully, on behalf of the Master Mates and Pilots of America, also testified.

On May 6, W. G. Lee, president of the Brotherhood of

Railroad Trainmen, Mr. Sheppard, S. E. Heberling, president of the Switchmen's Union of North America, and Mr. Carter testified against wage reductions for the members of their organizations, using arguments similar to those already outlined. Mr. Carter spoke at length against the alleged "open shop" movement and painted a dismal picture if such a movement were to be successful. He also attacked the accuracy of the statistics compiled by the United States Department of Labor, stating that because of lack of funds the department is unable to compile complete and accurate data.

American Short Line Hearing

Bird M. Robinson, president of the American Short Line Railroad Association, appeared before the Board on May 10 in behalf of certain short line railroads cited to appear before the Board in dockets 331 and 332 and styled the calling before the Board of the short lines listed in the above dockets as unusual and in his opinion so far outside of the authority conferred upon the Labor Board by the Transportation Act of 1920, that he felt it not only due the short line railroads represented by the association of which he was president but likewise a duty he owed the Board to present his personal views in regard to the case. He stated that the scope of his presentation would be to call attention of the Board to the questionable right of consideration of complaints that are without any justification in fact, or in any event, without such foundation in fact as gives the Board the right to hear and decide them.

In this connection he called attention to the notices sent to carriers located in varied and distant sections of the country to appear before the Board which do not advise or inform such carriers as to what particular organization of employees is making complaint or what particular craft or class of employees are members of organizations in whose behalf application is filed. Moreover, he went on to say, they do not show what person or officer filed the application in the several cases or any other fact which would enable the carrier to come prepared to answer the complaint, that there seems to be no rule of the Board which required such *prima facie* showing of fact as will give protection to the carrier against such proceedings.

In rounding out the position of the Association, he said that the Association had objected and still objected to the joinder of separate and independent carriers in the hearing and decision of complaints. Continuing, he said, that beginning with the eighteenth of October, 1920, the Association appeared in hearing in docket No. 26 and then and there showed to the Board that the requirements of Section 301 of the Transportation Act, 1920, had been disregarded in every case and that the Association therefore contended and still contends that in the case of each and every carrier represented by it, there was not such a dispute as could be submitted to the Board for hearing and decision. That in that presentation, he said what he now repeated, that the alleged disputes were not genuine but were in truth and fact part of the plan of the leaders of organized labor to nationalize all labor engaged in transportation service in the United States and place the employees in direct control of general officers, thus compelling the carriers to deal directly with them rather than with the employees engaged in their service.

"The law," Mr. Robinson said, "clearly contemplates that carriers shall not only have the right to deal directly with their employees, but this right is a mandate of Section 301 and it was never intended that the Board should become a National Board of Adjustment such as the leaders of organized labor seem to think it should be."

Mr. Robinson stated that the Association expected to show to the Board that in substantially all of the cases involved in docket No. 331 and 332 wherein the Association appeared for the individual carriers, there is in fact no foundation for the applications which were filed and the action of the Board cannot possibly serve any good purpose, whereas it naturally

has the effect of bringing about discontent and in some cases dispute which would not otherwise have occurred.

In concluding his statement, Mr. Robinson said: "From my place as president of the American Short Line Association, I have opportunity to know and do know the opinions of the managements of these numerous small properties. The opinion I get, without exception, is that the management would have no trouble in effecting a proper adjustment with their employees if it were not for the interference of officials or labor organizations. The interpretation which this Board seems to give to the Transportation Act is such that every carrier will be compelled to have a closed shop or else refuse in any case to employ any person who happens to be a member of a labor organization. It is obvious that Congress did not intend to bring about such a situation. The labor provisions of the Transportation Act, both in letter and in spirit, are intended as a method of conciliation and settlement as between the parties directly interested. It did not intend to create a labor autocracy such as will be, if the carrier is denied the right to initiate its own scale of wages without agreement of some employee or employees who may be members of labor organizations."

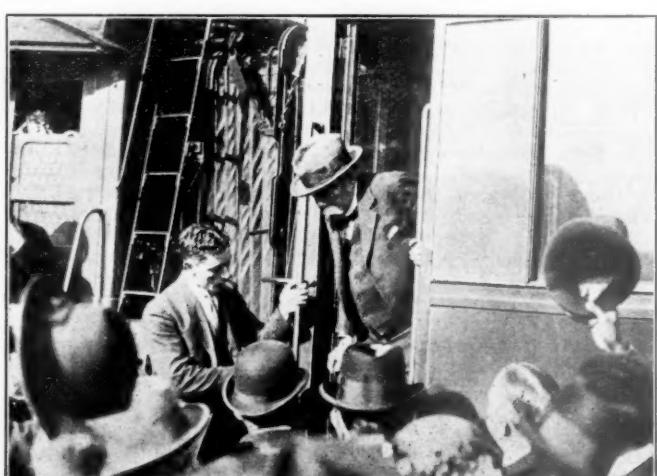
On May 11 B. M. Jewell filed exhibits with the Board, closing the wage hearings which began January 10. The American Short Line hearing was continued on May 11 when E. P. Curtis, vice-president of the Order of Railway Conductors, appeared in rebuttal to Bird M. Robinson's presentation. The hearing on the Greer letter was postponed until May 12.

Freight Car Loading Increases

WASHINGTON, D. C.

THE NUMBER OF CARS loaded with revenue freight continued to increase during the week ended April 30, according to the weekly report of the Car Service Division of the American Railway Association. The total was 721,997, as compared with 800,960 for the corresponding week of 1920 and 752,362 for the corresponding week of 1919. This is a gain of 17,000 in a week. Increases were shown in the loading as compared with the previous week in all classes of commodities, also increases as compared with the corresponding week of the year before in grain and grain products and merchandise and miscellaneous freight.

The freight car surplus also showed a further reduction during the week of April 30, to 482,352. The number of surplus coal cars shows a reduction of 6,000, to 229,443 but the surplus box cars shows a slight increase, to 178,037.



Clemenceau Arriving in Paris After His Trip to Egypt

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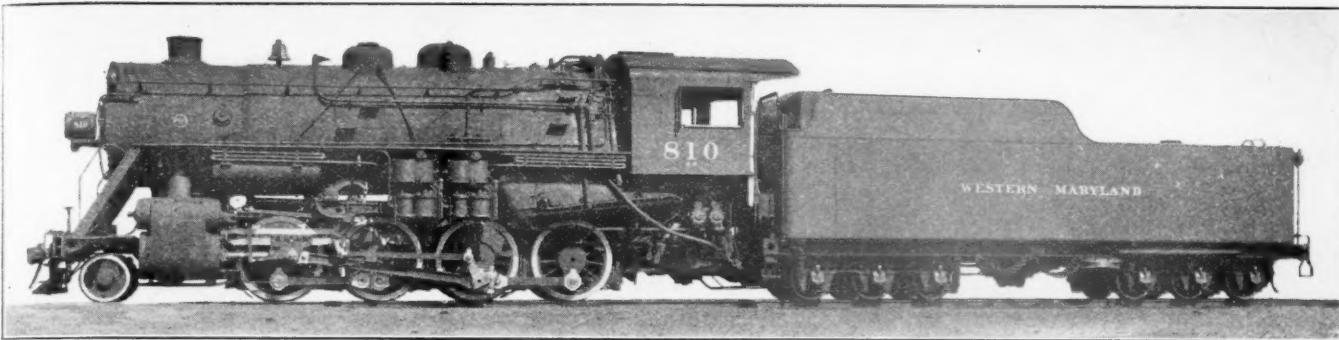


Photo by International

Consolidation Locomotives for the Western Maryland

**Weight and Tractive Effort Establish New Records for This
Type Tender of 15,000 Gallons Capacity**

THE DESIGN OF LOCOMOTIVES adapted to special operating conditions has led to the development of some notable examples of the standard types of freight and passenger power. A striking illustration of the high tractive effort that can be secured with a restricted wheel-base is found in the Consolidation locomotives recently built for the Western Maryland by the Baldwin Locomotive Works. These engines have a rated tractive effort of 68,200 lb., the weight on drivers being 268,200 lb. or 67,050 lb. per pair of drivers. In these particulars they exceed any engines of either the Consolidation or Mikado types heretofore constructed by the builder.

During the past ten years the Consolidation has been largely displaced by the Mikado and in view of the selection of the former type by the Western Maryland, a brief discussion of the advantages and disadvantages of each may be of interest.

The Consolidation type locomotive was introduced in this country in 1866, the first engine of this type having cylinders of 20 in. diameter and 24 in. stroke, and a total weight of 90,000 lb. The Consolidation wheel arrangement is well adapted for general freight service and following its introduction was widely adopted, being for many years the prevailing type of freight power. About twelve years ago the Mikado began to displace the Consolidation and comparatively few of the latter type have been built for heavy freight service in recent years.

The principal advantage of the Mikado lies in the fact that the longer wheel-base, with a trailing truck, permits the use of a longer boiler barrel and a deeper firebox, thus improving the capacity and efficiency of the boiler. The Consolidation, however, can be designed to give equally high tractive effort at low speeds where the boiler capacity is not the limiting factor. The absence of the trailing truck eliminates certain maintenance costs and the non-symmetrical wheel-base is easier on the track.

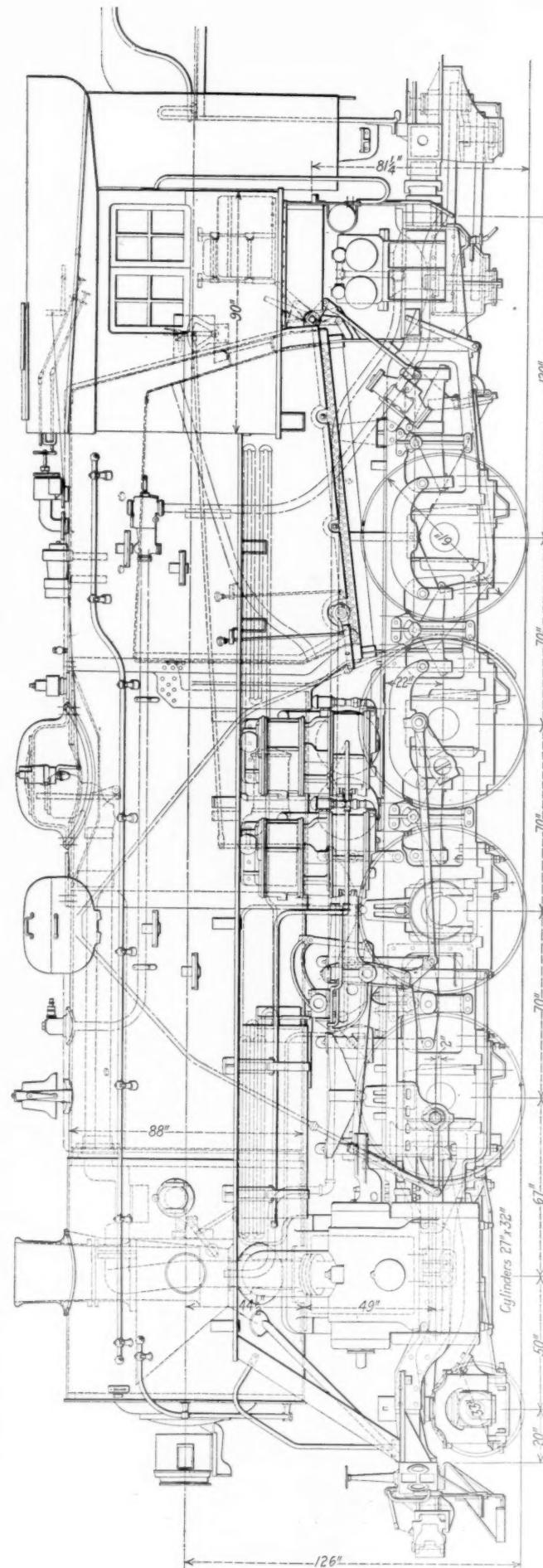
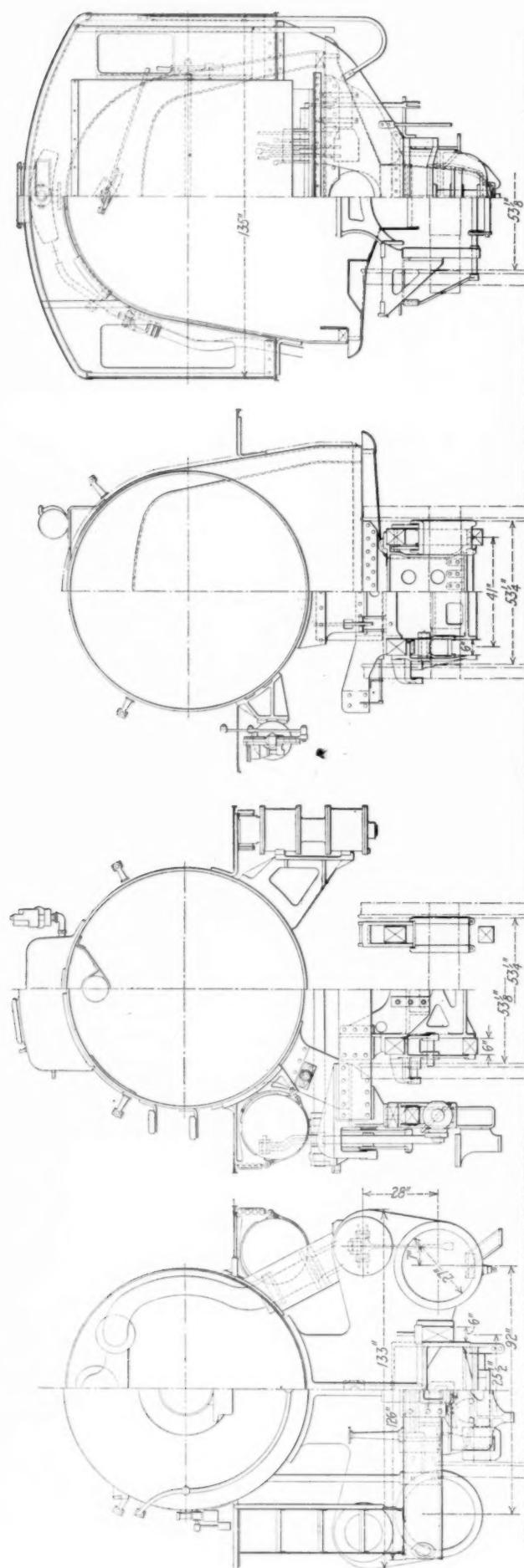
The improved utilization of fuel and higher speed capacity have generally been considered to outweigh the disadvantages of the Mikado. However, Consolidations are still used to a considerable extent for heavy drag service where slow speeds will suffice. With driving wheels of the size that are suitable for work of this kind, it is possible in a Consolidation engine to obtain a reasonably good boiler design. The firebox throat can be made of sufficient depth to install a brick arch without raising the boiler to an excessive height. Such a locomotive, with a high percentage of total weight on driving wheels, is well fitted for heavy, slow speed service.

The Consolidation engines which the Baldwin Locomotive Works are now building for the Western Maryland are a remarkable example of locomotives for such work. These engines are designed to operate on 90 lb. rails, to traverse curves of 22 deg. and grades of 3½ per cent. The total weight is 294,900 lb. The ratio of adhesion is 3.93, indicating that the weight on drivers is utilized for tractive purposes to the fullest possible extent. As compared with a design of heavy Consolidation built for the Western Maryland in 1910 and using saturated steam, these new locomotives show an increase in total weight of 31 per cent, and in tractive effort of 40 per cent.

The boiler is of the straight top type with horizontal roof sheet and sloping throat and back head. The diameter of the first course of the barrel is 88 in. The throat has a depth of 19 13/16 in., measured from the under side of the barrel to the bottom of the mud ring. The firebox is supported at the front and back on vertical plates. The front end of the crown is supported on three rows of expansion stays, and about 550 flexible staybolts are applied in the breaking zones in the sides, throat and back. The distance between the two sheets is 15 ft. 3 in. Fifty superheater tubes of 5½ in. diameter and 240 water tubes of 2¼ in. diameter are used. The ratio of length to internal diameter in the water tubes is 91.5, this low value indicating that the capacity of the boiler has been made high at some sacrifice of fuel economy. The safety valves are placed just forward of the firebox and, as the clearance is limited, they are tapped directly into the boiler shell instead of being mounted on an auxiliary dome.

The firebox equipment includes a brick arch, power operated fire door and grate shakers and a Standard stoker. The drop plates are at the back of the grate. The ash pan has two hoppers with swing bottoms, both of which are controlled by one handle. Flushing pipes are applied for washing ashes from the slopes of the pan.

The frames are 6 in. wide, spaced 41 in. between centers, each frame being cast in one piece with a single front rail to which the cylinders are bolted. The transverse bracing calls for special attention. A most substantial steel casting, placed just back of the cylinders, extends the full length of the leading driving pedestals and serves as a fulcrum for the driving brake shaft. The guide yoke crosstie is also of cast steel and it is extended back sufficiently far to brace the second driving pedestals. This crosstie also serves as a support for the driving brake cylinders, one of which, because of lack of room, is placed in a horizontal, and the other in a vertical position. The two brake shaft arms are placed



Side Elevation and Cross-Sections of the Western Maryland Consolidation

at right angles to each other, the horizontal cylinder being connected to the vertical arm by means of pull rods, while the vertical cylinder is directly connected to the horizontal arm. The frame braces further include a steel casting at the main driving pedestals and a casting, placed between the main and rear pedestals, which is bolted to both the top and bottom frame rails and serves as a support for the forward end of the firebox.

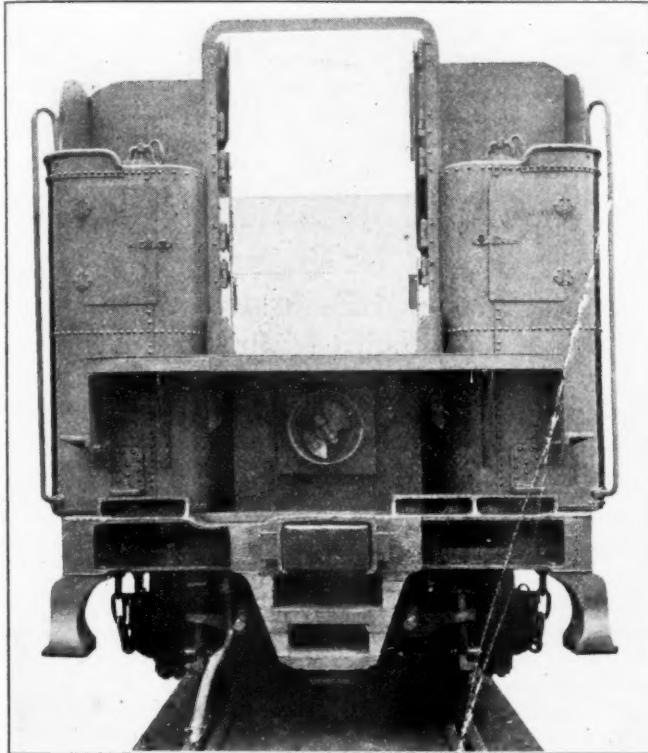
The cylinders are fitted with gun iron bushings, and the steam distribution is controlled by 14 in. piston valves. Walschaert valve motion is used and the gears are controlled by the Pittsburgh power reverse mechanism. The equipment

placed below the upper frame rail. Limited clearance space under the firebox did not permit placing the springs over the boxes of the two rear pairs of wheels.

The cab is unusually roomy and comfortable with all fittings placed within convenient reach of the crew. The injectors and steam turret are placed outside the cab and have extension handles identified by small aluminum plates with raised letters. The equipment includes a breather pipe for providing fresh air while passing through tunnels. This arrangement consists of a $\frac{1}{2}$ in. pipe placed across the boiler back head and having five $\frac{1}{4}$ in. globe valves equally spaced, each fitted with 3 ft. of $\frac{1}{2}$ in. hose. The air supply is drawn from the brake system.

An interesting detail is the arrangement of the hand rail columns, which are in the form of clamps, so that the hand rail can be readily taken down without removing the columns. The headlight dynamo is placed on the right hand side of the boiler, ahead of the cab, and the wiring is run through the hand rail. The pilots are adjustable as to height above the rail and are of short design so that two locomotives can be coupled pilot to pilot without interference.

The tenders of these locomotives are of special interest,

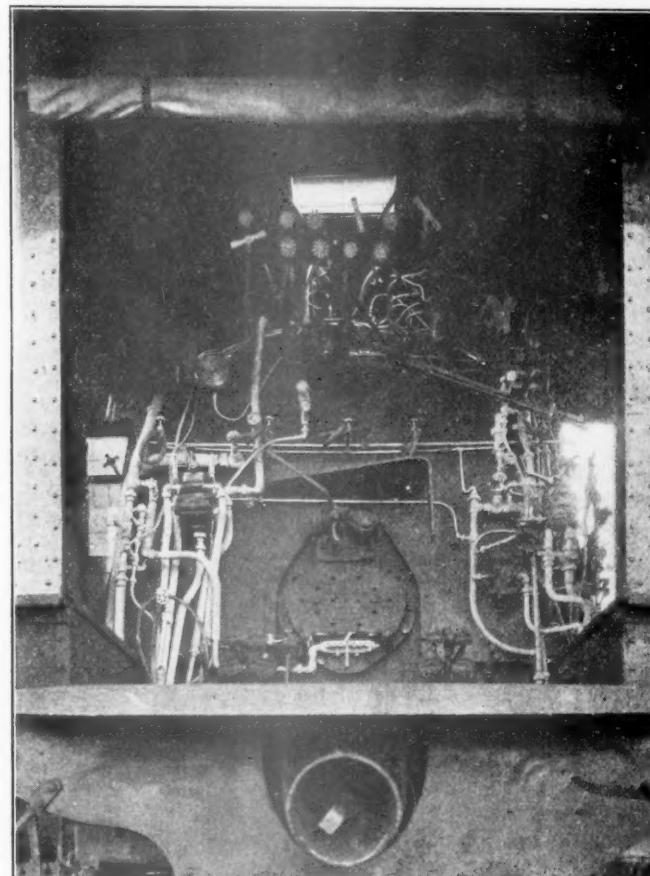


Front View of the High-Capacity Tender

includes automatically operated drifting valves designed by the railway company. The links are carried on longitudinal supports of cast steel, which are bolted in front to the guide bearers, and at the rear to a crosstie placed between the second and third pairs of drivers. The reverse shaft is located immediately in front of the links and the lifting arms extend in a backward direction, each radius rod being suspended at its rear end. The valve motion is so designed that the link blocks are down when running ahead. Other machinery details include cast steel piston heads of dished section with cast iron bull rings and packing rings. The guides and crossheads are of the Laird type. The main rod stubs are of the open end type which permits renewing the brasses without removing the eccentric cranks.

The driving boxes are of cast steel and are fitted with bronze hub faces and brass lined pedestal faces. Cast iron shoes and wedges are used, the latter being of the self-adjusting type. The driving axles and engine truck axle are of heat treated steel, and flanged tires are used on all the wheels. Flange oilers are applied to the front and back drivers.

The truck is of the Economy constant resistance type and is equalized with the first and second pairs of driving wheels. Dolphin beams are placed over the boxes on the third and fourth pairs of drivers and are connected on each side of the locomotive with three inverted leaf springs which are



Breather Pipes for Use in Tunnels Are a Novel Feature of the Cab Equipment

having the unusual capacity of 15,000 gal. of water and 16 tons of coal. The tanks are comparatively long and low in order to keep the center of gravity as low as possible. The extreme length of the tank is 36 ft. 6 in. and the width 10 ft. $5\frac{1}{2}$ in., while the depth is 6 ft. 6 in. with a collar 32 in. high on each side of the fuel space. The sides and rear of the fuel space are sloped so that the coal will gravitate into the stoker trough even when only a small amount is on the tender. The stoker trough is constructed so that it may be removed as a complete unit even when the tender has a full load of coal. An unusually complete arrangement of

COMPARISON OF RECENT TYPES OF CONSOLIDATIONS

Pennsylvania Lines	Union Railroad	Bessemer & Lake Erie	Lake Superior & Ishpeming	Philadelphia & Reading	Western Maryland
Cylinders 26 in. by 28 in.	25 in. by 32 in.	26 in. by 30 in.	26 in. by 30 in.	25 in. by 32 in.	27 in. by 32 in.
Valves Piston, 14 in. diameter	Piston, 12 in. diameter	Piston, 14 in. diameter	Piston, 14 in. diameter	Piston, 13 in. diameter	Piston, 14 in. diameter
Boiler type..... Diameter 78½ in.	Straight top 84 in.	Straight top 84 in.	Straight top 88 in.	Straight top 79¾ in.	Straight top 88 in.
Working pressure..... Firebox, length..... Firebox, width..... Tubes, diameter..... Tubes, number..... 5¾ in. and 2 in.	190 lb.	190 lb.	185 lb.	200 lb.	210 lb.
2 in.—36 2 in.—265	110½ in.	120½ in.	108¾ in.	126¼ in.	112 in.
15 ft. 1 in.	72 in.	70½ in.	78¾ in.	108¾ in.	96¾ in.
175 sq. ft.	5¾ in. and 2½ in.	5½ in. and 2½ in.	5¾ in. and 2 in.	5¾ in. and 2 in.	5½ in. and 2½ in.
.....	5½ in.—36	5½ in.—36	5¾ in.—45	5¾ in.—36	5½ in.—50
.....	2 in.—200	2½ in.—200	2 in.—300	2 in.—239	2½ in.—240
15 ft. 0 in.	15 ft. 0 in.	15 ft. 6 in.	13 ft. 6 in.	15 ft. 3 in.	15 ft. 3 in.
214 sq. ft.	207 sq. ft.	216 sq. ft.	225 sq. ft.	232 sq. ft.	232 sq. ft.
.....	.....	.....	71 sq. ft.	.....	.....
.....	2,530 sq. ft.	2,530 sq. ft.	3,390 sq. ft.	3,236 sq. ft.	3,236 sq. ft.
.....	27 sq. ft.	27 sq. ft.	29 sq. ft.	30 sq. ft.	30 sq. ft.
Firebrick tubes..... Total sq. ft.	2,771 sq. ft.	2,737 sq. ft.	3,613 sq. ft.	2,655 sq. ft.	3,498 sq. ft.
Superheater..... Grate area..... Driving wheels, diameter..... Journals	654 sq. ft.	634 sq. ft.	844 sq. ft.	575 sq. ft.	945 sq. ft.
55 sq. ft.	54.4 sq. ft.	58.6 sq. ft.	94.9 sq. ft.	58.7 sq. ft.	74.9 sq. ft.
62 in.	55 in.	54 in.	57 in.	55½ in.	61 in.
10½ in. by 13 in.	Main 11 in. by 13 in. Others 9½ in. by 13 in.	Main, 11 in. by 13 in. Others, 10½ in. by 13 in.	11 in. by 13 in.	11 in. by 13 in.	Main, 12 in. by 13 in. Others, 11 in. by 13 in.
.....	30 in.	30 in.	30 in.	33 in.	33 in.
.....	6 in. by 12 in.	6 in. by 12 in.	6½ in. by 12 in.	7 in. by 11 in.	6 in. by 12 in.
.....	16 ft. 4 in.	15 ft. 7 in.	16 ft. 0 in.	17 ft. 0 in.	17 ft. 6 in.
.....	25 ft. 1 in.	24 ft. 4 in.	26 ft. 0 in.	27 ft. 0 in.	27 ft. 3 in.
.....	60 ft. 1½ in.	61 ft. 4 in.	60 ft. 11½ in.	63 ft. 11 in.	74 ft. 1¼ in.
.....	240,320 lb.	242,300 lb.	238,000 lb.	250,800 lb.	268,200 lb.
.....	226,900 lb.	19,940 lb.	30,000 lb.	30,300 lb.	26,700 lb.
.....	22,600 lb.	260,260 lb.	268,000 lb.	294,900 lb.	281,100 lb.
.....	249,500 lb.	404,000 lb.	425,000 lb.	462,000 lb.	565,000 lb.
.....	431,000 lb.	53,300 lb.	56,000 lb.	61,500 lb.	68,200 lb.
.....	53,300 lb.	58,700 lb.	60,600 lb.	61,500 lb.	68,200 lb.

transverse and longitudinal dash plates is applied to prevent the water from surging.

The frames are of one piece cast steel construction made by the Commonwealth Steel Company. The total length is 38 ft. 8 in. and the width over outside sills is 8 ft. 11¼ in. The distance between truck centers is 22 ft. 11¾ in.

The trucks are of the six wheel type, manufactured by the Commonwealth Steel Company. The truck frames are constructed with longitudinal and transverse members of steel, cast in one piece. The pedestals are bolted to the frames and the wheel loads are equalized on each side. Swing bolsters are used and are hung on three-point suspension links. The brakes are of the clasp type. It is found in practice that these tenders take curves smoothly and are very easy riding.

The locomotives have a height of 15 ft. 10 in., a width over cab boards of 11 ft. 4 in., and a total length of engine and tender, measured from face to face of beams, of 80 ft. 4¾ in. Their leading dimensions, in comparison with those of a number of heavy Consolidation type locomotives built during the past few years by the Baldwin Locomotive Works, are given in the accompanying table.

Director General Estimates Loss from Railroad Operation

WASHINGTON, D. C.

AT THE REQUEST of the chairman of the Committee on Appropriations of the House of Representatives the director general of railroads, James C. Davis, has submitted a statement showing the progress made in the adjustment of disputes between the Railroad Administration and the carriers arising out of or incident to federal control. This report shows there were 555 separate properties taken over by the government, with which adjustments must be made. In addition to these properties, there are 855 short line railroads, each making claim for adjustment covering the first six months of federal control, from January 1 to June 30, 1918, on which latter date these lines were formally relinquished.

Up to this time 149 companies have filed their claims on final settlement with the Railroad Administration. This represents about 33.5 per cent in number and about 58.5 per cent in mileage of the entire number of properties, excluding the short lines. The aggregate amount of claims filed to date is \$633,708,281, and, if the remaining claims are filed on the same general lines as the claims already filed, the director general estimates that the total amount of claims will aggregate about \$1,250,000.

Up to May 1, 1921, 47 roads had been settled with. The aggregate amount claimed by the 47 roads was \$124,040,867. These claims have been settled on the basis of about 40 per cent of the face of the claims.

In the aggregate claims filed, amounting to \$633,708,281, \$359,000,000 represents claims for undermaintenance, \$183,000,000 for undermaintenance of way, and \$175,000,000 for undermaintenance of equipment. It is estimated that, when the carriers have all filed their claims, the undermaintenance claimed will aggregate between \$700,000,000 and \$800,000,000. In the settlements already made but a small percentage of undermaintenance claims have been recognized, the report says.

Marked differences have arisen between the administration and the carriers as to the liability of the administration for undermaintenance. Up to this date the companies which have settled have adopted the theory of the administration. The aggregate of these differences is very large, amounting to several hundred million dollars, and it may be necessary to obtain the opinion of the Supreme Court of the United States before final adjustment is made with some of the companies.

Director General Hines estimated that the loss to the government in operation during the period of federal control would be \$900,478,756.56. Because of claims which have arisen that were not considered by Mr. Hines and the underestimate made in the allowance for maintenance, fire losses, additions and betterments made solely for war purposes, and other accounts, it is the estimate of the present director general that the operating loss to the administration will be about \$1,200,000,000, or \$300,000,000 in excess of the estimate made by former Director General Hines.

"It must be borne in mind," the report says, "that this estimate is based on making settlement upon the administration's construction of the upkeep section of the standard contract. Should the Supreme Court ultimately approve the carriers' contention in regard to maintenance, as set out in said upkeep section, the liability of the Railroad Administration would be very largely increased." The report adds that the Railroad Administration records fail to support claims for overmaintenance sufficient in amount to offset the amounts claimed, and that "it is quite evident that some allowance must be made on account of undermaintenance." The differences of construction of the act between the carriers and the administration, it is said, will amount to several hundred million dollars.

The report also gives a short summary of the nature and character of claims of third persons against the Railroad Administration apart from the claims of the carriers. There are now pending before the Interstate Commerce Commission over two thousand formal complaints for reparation against the director general on account of rates put into effect during federal control. These complaints involve unknown amounts but in some cases a tremendous tonnage movement is involved. In addition to calling on the individual carriers to defend these claims the administration has provided a special department for this purpose in the division of Law. A large number of claims for personal injury, loss and damage, overcharge, labor, fire losses, and taxes were also left over as a result of federal operation and these claims are liabilities of the director general. As a result of a ruling of the supreme court of Minnesota some five thousand cases have been instituted against the Railroad Administration for damages resulting from a devastating fire in the forest regions of Minnesota in October, 1918, which caused a money loss of from \$25,000,000 to \$40,000,000. So far quite a number of judgments have been rendered against the Railroad Administration in lower courts on account of these claims on the ground that railroads started some of the fires.

It also appears that the Railroad Administration has assets aggregating \$430,930,138.08, composed of negotiable obligations of the various carriers. These consist of equipment trust obligations and notes and bonds taken by the Railroad Administration during the period of federal control.

Also the Railroad Administration has to its credit in available cash \$228,977,311. It is suggested that if, instead of making a direct appropriation for the use of the Railroad Administration, the Secretary of the Treasury could be authorized, upon a proper showing of necessity, to take over at their face value, from time to time, such amounts of the obligations of the railroads held by the Railroad Administration as may be required to complete the liquidation, the liabilities of the Railroad Administration could be adjusted without a direct appropriation in its favor. As subsequent settlements are made additional obligations of debtor roads will be taken and held by the Railroad Administration, such indebtedness being for purposes provided for and in accordance with the transportation act. If the Railroad Administration could cash a sufficient amount of these securities, it has in all probability assets considerably more than sufficient to pay all of its obligations. If an arrangement of this kind is not feasible, an additional appropriation of \$200,000,000

will be required to continue the Railroad Administration liquidation up to the end of the fiscal year 1922.

The controlling reason why more settlements have not been made is stated to have been the delay of the carriers in filing their final claims. Practically no such claims were filed during the calendar year 1920.

In concluding the report, the director general gives the following summary of the situation:

"I have no desire to exaggerate the importance or the complexities of making this final adjustment of the 26 months of federal control and operation of the transportation systems of the country. It is undoubtedly the greatest adjustment between one tenant and over five hundred landlords that has ever occurred. A brief repetition of familiar figures emphasizes this.

"The railroads constituted an immense industrial plant, comprising in round numbers 250,000 miles of main line, with all of the innumerable structures which go to make up and operate railroads—shops, yards, roundhouses, machine shops, store houses, bridges and the like; 2,500,000 freight cars, in all stages of repair; 66,000 locomotives; 55,000 passenger cars; some \$600,000,000 of materials and supplies scattered over the many lines of road, with no inventory taken at the time; 555 separate companies, with nearly 2,000,000 employees; the gross earnings of the properties for the year ending December 31, 1917, over \$4,000,000,000, with net earnings for the same period of nearly \$1,000,000,000, and the entire value of the property estimated at from \$15,000,-000,000 to \$20,000,000,000. This property was operated under the abnormal conditions of a world war. The demand for labor and materials in all industrial enterprises was greatly in excess of the supply. In the effort to combine this stupendous aggregate of independent lines into a single and co-ordinating concern much of the operating property of the individual carriers was inextricably intermingled. The adjustment and straightening out of this wonderful adventure on the part of the government presents for solution novel, complex, and important questions wholly without precedent.

"The government took this great plant over night. It was taken at a time when serious and almost unprecedented winter weather greatly embarrassed and increased the expense of operation, and at a time when congestion of traffic, largely brought about by unusual exigencies in the business incident to the war, and priority orders of war material intended for export, had in effect practically broken down the ordinary efficiency of railroad transportation, especially those eastern lines connecting with Atlantic ports.

"The property was in all stages of obsolescence. It was taken under a proclamation issued by the President, who, in a statement of even date with the proclamation, declared that he would recommend to Congress the passage of a law providing 'that the railway properties will be maintained during the period of federal control in substantially as good repair and as complete equipment as when taken over by the government.'

"The Congress, following this recommendation, in the federal control act provided that the standard contract should contain such provisions 'as may be requisite in order that the property of each carrier may be returned to it in substantially as good repair and in substantially as complete equipment as it was in the beginning of federal control.'

"Most of the roads entered into standard contracts, the terms of which attempt to provide rules by which the questions of upkeep shall be determined. It is differences of opinion as to the construction of these rules from which arises most of the controversies between the Railroad Administration and the carriers in carrying out final settlements.

"In conclusion, I want to suggest and emphasize that in reaching final settlements the disputes to be adjusted between the carriers and the Administration are not mere matters of

accounting, to be settled by the application of fixed and definite rules that may be followed by accountants and statisticians, but every settlement presents serious practical questions, many of them new and novel, that can only be fairly determined by men on both sides who have had actual and extensive railroad experience in the field."

Results of Extended Tests With Titanium Treated Rails

THE TITANIUM ALLOY MANUFACTURING COMPANY, Niagara Falls, N. Y., has just made public the results of an extended series of investigations inaugurated in 1913 to determine the effects of the use of titanium in rail steel. Earlier results of these investigations were published in a series of eight bulletins, the last of which was issued in 1915 while data from the more extended tests since that date are incorporated in Bulletin No. 9 which has just been issued. The later investigations were undertaken to determine (1) the exact structural and physical differences between titanium-treated and untreated rails and the causes for difference in service; (2) a simple practical method for ascertaining the efficiency of the titanium treatment so that improperly treated heats might be identified and separated from those free from excessive segregation; (3) the service which several thousand tons of titanium-treated rails rendered in four to six life years in track as compared with rails rolled under similar conditions but without this treatment.

During 1913 and 1914 samples of A-rails (the top rails of the ingots) from 111 different heats of standard and 101 heats of titanium-treated open-hearth steel, made for various railroads at mills of six different steel companies, were forwarded to the laboratories of the Titanium Alloy Manufacturing Company for analysis. Early in 1915 the Pennsylvania Railroad adopted its 100-lb. P. S. section rail which included a limitation as to segregation. In an earlier report it was stated that the application of this segregation specification to each of the A-rail samples from the 212 heats above referred to indicated that the A-rails from only 37 per cent of the heats of standard open-hearth steel passed the Pennsylvania requirements, whereas these rails from 93 per cent of the titanium-treated heats passed the specification.

While this improvement in the total segregation was very interesting it was thought that there must be some discernible difference between the titanium-treated steels, which showed negative or moderate segregation of carbon in the A-rails and those few which showed excessive segregation. In an effort to determine if any such difference existed, samples of each of the titanium-treated steels were analyzed for titanium by two methods; one in which the total titanium present was determined, while in the other only that part of the titanium insoluble in hydrochloric acid. This latter method, it is believed, gives the amount of titanium remaining in the finished steel in excess of that usefully consumed in deoxidation. When the determinations for insoluble titanium were made on these titanium-treated samples numerous samples of untreated steels were also analyzed in the same way and in no case was over .002 per cent of insoluble titanium found in any untreated steel; whereas in the titanium-treated steels the amount of insoluble titanium varied from as low as .002 per cent to .03 per cent, while the average content of insoluble titanium in the treated steels was approximately .01 per cent or 10 per cent of the total titanium (0.10 per cent) added to the ladle in the form of ferro carbon-titanium.

Further experiments were conducted to substantiate the recommendation of the manufacturer that where rebarburizer in the form of liquid spiegel was added it should be done in the furnace before tapping and the titanium added alone in the ladle, since where a large amount of liquid spiegel, with

its accompanying acid slag, is poured into a ladle of steel, the metal is so agitated and the slag so intimately mixed with it that an immediate addition of titanium is apt to be lost by expending itself in deoxidizing the slag. As a result no benefits are derived from the use of titanium, such as are normally obtained when the spiegel is added in the furnace and its reactions completed before tapping, or when no spiegel is used but only comparatively small and much cleaner additions of ferromanganese and ferrosilicon precede the ferro carbon-titanium in the ladle.

The determination, in steel, of titanium insoluble in hydrochloric acid is a very simple method and can be made very quickly and accurately. This determination will ordinarily make further analytical work unnecessary because so high a percentage of titanium-treated rail steel will meet the required specification for segregation.

It has been suggested that, in order to conform to regular mill practice, all rails that pass the usual physical requirements be accepted by the purchaser. Samples for titanium determination could be taken by inspectors for the purchaser and sent to its laboratories or those of any agency it might employ. Results of the analytical work would be available before deliveries of rail were made and the A-rails from any heats that showed more than the allowable segregation could be placed where track service was not severe. Arrangements might be made with the rail mills that such rails would be classed as seconds or specials.

It is claimed by the manufacturers that the adoption of this simplified method should (1) eliminate the majority of rail failures; (2) assure the purchasers of rails of the more uniform steel throughout all the ingots of a heat; (3) provide a larger yield of acceptable rails by eliminating serious segregation in the upper portion of the ingot and (4) offer the possibility of raising the carbon content of the steel slightly as the segregation can be controlled effectively by this method. This would result in better wearing steel.

In substantiation of its claim that these results have been obtained in practice attention is called to the comparative test of 14,310 tons of standard 90-lb. A.R.A. type A open-hearth rails rolled at four different mills and 6,000 tons of titanium-treated open-hearth rails of the same weight and section laid in tracks of the Chicago & Alton in 1913. These tonnages were laid so that the service for all rails was approximately the same. In this investigation of nearly eight years the total failures of standard open-hearth rails has been 116 and of titanium-treated rails 16, or 114.56 and 37.72 per 100 track miles respectively.

Similarly, analyses of the rail failure statistics of the American Railway Engineering Association for 1918 show average failures per year in service per 100 miles of track to be 13.7 for standard open-hearth rails as compared with 6.8 for titanium-treated open-hearth rails, while similar figures contained in the report for 1919 show 14.6 and 4.9 failures respectively.

Attention is also called to a report of the A.R.E.A. Rail Committee in May, 1917, which included inspection results on approximately 195,000 tons of 100-lb. P. S. section open-hearth rails made for the Pennsylvania railroad under its 1915 special segregation specification in which the average discard from the top of the ingot was 26.2 per cent and the average rejections 9.0 per cent, giving a total average discard and rejection of 35.2 per cent. In comparison, inspection records on the manufacture of 13,000 tons of titanium-treated open-hearth rails rolled in 1913, 1914 and 1919, showed an average discard from the top of the ingot of 9.0 per cent and a rejection of 3.8 per cent. Applying the Pennsylvania segregation specification to this tonnage, the total discard and rejection would have been 15.67 per cent, or less than one-half that which actually occurred with the Pennsylvania railroad rails.

Prosperity Dependent Upon Revived Foreign Trade

Decline in Exports Cited by Foreign Trade Convention as Cause of Depression—Remedies Proposed

THE NECESSITY of a revival in foreign trade before normal business conditions can be restored in this country was emphasized in the final declaration of the Eighth National Foreign Trade Convention which was held at Cleveland from May 4 to 7. The declaration further asserted that no readjustment to meet the new conditions in business could be complete without "reduction in the costs of railroad transportation both for domestic and export shipment." In opening the convention, J. A. Farrell, president of the United States Steel Corporation and chairman of the National Foreign Trade Council, characterized the difficulties of financing our exports as the chief problem to be solved in the restoration of normal foreign trade. He pointed out that "no nation can long carry on with success an unbalanced foreign trade, whether the disproportion be on the side of imports or exports." He said further that the original cause of the present business depression was "the almost complete stoppage of foreign trade."

The convention this year presented a marked contrast to the one held a year ago at San Francisco. The discussion at that time centered on ways and means to take care of the then enormous volume of our export trade and how to maintain our position in the markets which had been built up. At Cleveland some 1,500 delegates were in attendance. At San Francisco a year ago the attendance was in the neighborhood of 2,300. Last year when the problem involved taking care of the trade already acquired the chief activity of the convention was the discussion of the peculiarities of the various foreign markets and of means whereby our various industries could meet the demands placed on them by heavy foreign orders. This year the discussion was centered on the solution of the financial difficulties which are hindering the sales of American goods abroad.

Various Subjects Considered

The convention was conducted as usual by general sessions and group sessions. The general sessions were devoted to matters of general policy and the group sessions to the problems of various specialized fields under the general subject. The general sessions were as follows: I The Financial Situation; II The Need for Long Term Credits in Our Foreign Trade; III Foreign Trade Policies; IV The Merchant Marine, and V National Program for Foreign Trade.

The various subjects assigned to group sessions were: I Commercial Education for Foreign Trade; II Foreign Credits; III Problems of the Export Manager; IV The Motion Picture in Foreign Trade; V Special Export Problems of the Manufacturer; VI Foreign Trade Advertising; VII Inter-American Trade Relations; VIII Interest of Agriculture in Foreign Trade; IX Banking Service to Foreign Trade; X The Service of the Export Commission House, and XI Trade Relations with the Far East.

In addition to the regular sessions there were a number of experts in various fields of foreign trade from government departments and elsewhere who acted as "trade advisers" to representatives of the various industries who sought their counsel regarding the problems of their particular businesses.

Contrary to the precedent set last year the foreign trade situation as it affects the railroads received no special attention at either the general or the group sessions.

The chairman of the convention was A. C. Brown, president of the Brown Hoisting Machinery Company and president of the Cleveland Chamber of Commerce. Mr. Brown was elected by a unanimous vote of the convention

following the opening of the first general session by J. A. Farrell, chairman of the National Foreign Trade Council.

The Financial Situation

The financial situation with relation to our foreign trade was discussed in some of its broader aspects by W. P. G. Harding, governor of the Federal Reserve Board, and F. I. Kent of the Bankers' Trust Company, New York. Governor Harding devoted his address to the means of "thawing our frozen credits." He advocated all possible stimulation of business as the most effective means of liquidating these credits. Governor Harding took an optimistic view of the general business situation and stated that the time had come for "renewed courage and confidence," that there was "no point in forcing liquidation further," that "we have passed the worst of our troubles" and that "the problems ahead of us all are solvable." Governor Harding was followed by Mr. Kent, who urged greater honesty in our business relations and the hearty support of investors in purchasing the securities offered by Edge law corporations as solutions for the serious obstacles with which our foreign trade is faced.

The Need for Long Term Credits

The present difficulties of lumber exporters in meeting foreign competition due to the adverse exchange situation and to the inability to finance the extension of long term credits were discussed by J. J. Donovan, vice-president of the Bloedel-Donovan Lumber Mills, Bellingham, Wash. The importance of long term credits to the manufacturer of specialties was discussed by F. H. Taylor, president of the S. S. White Dental Manufacturing Company, Philadelphia. The same question was treated from the point of view of the manufacturer by G. R. Meyercord, president of the Illinois Manufacturers' Association, and from that of the exporter of agricultural products by J. H. Barnes of the Barnes-Ames Company, New York.

The lack of interest on the part of investors in subscribing to the stock of the various Edge law corporations, particularly the Foreign Trade Financing Corporation, was said by W. C. Redfield, president of the American Manufacturers' Export Association and formerly secretary of commerce, to be holding up millions of dollars' worth of foreign business which would open up many mills and factories and give employment to thousands. Mr. Redfield said in part:

"I know personally of orders from other countries of over \$20,000,000 available to the United States at the present time which can be closed just as soon as the corporation operates. These orders, I know, are for firms in Chicago, New York, Boston, St. Louis, Philadelphia, Cleveland and several southern cities, and, I am informed, it is true also of Spokane, Seattle and San Francisco.

"It is not a question of whether this corporation ought to be formed and put into operation, but one of whether we shall go up or down in the foreign export trade. We have the ability to compete with foreign competitors, but we have reached the end of our financial power with the tools we have, and unless new tools to enable us to extend long-time credits to our foreign trade are created speedily we have reached the end of our useful activities in export trade. Our British competitors can get credits extended for four, six or eight years. We cannot.

"We have no alternative but to shrink at home unless we go after the export trade. This corporation is not being organized to thaw frozen credits, to relieve the banks or to

be representative of any group or clique or part of America, but for America as a whole."

Senator Edge's Address

At the annual banquet held on May 7, Senator W. E. Edge addressed the convention on the general subject of American foreign trade. He advocated practical legislation to assist in curing the "economic ills" of the country but warned that "industry cannot be inspired or prosperity be promoted merely by legislation." The establishment of confidence at home and the extension of credit to foreign buyers, he said, were the practical methods of stimulating business in this country. Senator Edge emphasized the importance of the "deplorable situation of the railroads" as a factor in "the prevailing uncertainty" in business. He also characterized our merchant marine as a "monumental failure" and declared that the government would "do well to save 35 per cent of the billions of dollars invested, much of it in absolutely worthless and valueless craft that cannot be even given away." The senator summarized his address, in part, as follows:

"I contend that all these ills—depression in business, depression in production, lack of business for railroads and the merchant marine and consequent unemployment—will be corrected only if we attack the root of the evil; and the only solution to these and other related problems is the securing of a market. The buying power both at home and abroad exists; if abroad, it is aided by an extension of credits we can well afford to extend, and the foreign buyers have the security to protect us; and at home by the return of confidence which can only be brought about by a realization that men can develop, can make a reasonable profit on their enterprise and, most important, retain it. We cannot expect to rejuvenate foreign or domestic enterprise as long as the government continues a policy of requiring as high as 70 per cent of the profits to be paid to the government; the tax system must be revised so that the burden will be more equably distributed and in the long run the rich will pay the bill just the same, because they will be encouraged to do big things and thus employ labor, increase production and radiate that happiness and contentment necessary to insure general prosperity. Even the workman can afford to pay a nominal tax if he is employed; it would pay him more to pay such a nominal tax than to have no income with which to pay anything.

"The thought in my mind that I hope I have made clear is that these various troubles of the railroad situation, the merchant marine situation, the farmers' troubles, or whatever the case may be, will be corrected only by the two accomplishments—confidence at home and credit abroad."

The "Final Declaration"

At the last general session of the convention a "final declaration" of opinions and recommendations was adopted. This statement called attention to the decline of our export trade from \$928,000,000 in June, 1920, to \$384,000,000 in March, 1921, and pointed to the inability of foreign buyers to pay for goods which they are greatly in need of as the cause for the decline. An increase in imports of goods "not detrimental to existing industry" and the "creation of adequate facilities for the purpose of drawing upon surplus American investment funds in order that the long term credits so badly needed by the disorganized countries of Europe may be furnished" were urged as solutions to our present difficulties. The declaration follows in part:

The world is suffering today from unbalanced exchanges. Notwithstanding the position of the United States as a creditor nation, the present unstable financial condition of a large part of the world, especially of Europe, is the fundamental cause for our own business depression. A return to normal conditions in our own country depends in large part upon an improvement of our foreign trade. The present

retrogression is clearly evidenced by the maximum of the country's export trade \$928,000,000 in June, 1920, decreasing in October to \$751,000,000 and in March, 1921, to \$384,000,000.

Foreign nations whose imports exceed their exports have been compelled to curtail purchases because of inability to pay by exports. The result of this would be eventual restoration of more normal exchange, but the requirements of international commerce and domestic prosperity in each country demand immediate relief from present stagnation.

The United States must continue to increase its imports of raw material and merchandise not detrimental to existing industry in order to receive pay for the exports necessary to stable employment of labor in agriculture and industry; and to permit of the liquidation of the obligations of the debtor nations. Continued liquidation in gold of foreign obligations to us will tend to renew inflation and arrest the beneficial readjustment of values on the basis required by present conditions throughout the world.

It is generally agreed that the solution depends upon our ability to create adequate facilities for the purpose of drawing upon surplus American investment funds in order that the long term credits so badly needed by the disorganized countries of Europe may be furnished. Most of the countries of Europe are unable to pay us now and for some time to come in gold or merchandise, and unless they are enabled to obtain credits to purchase the raw materials which they need, their business and ours will continue to stagnate.

We urge the immediate creation of financial institutions under the Edge law, whose machinery will facilitate extension of long term credits to promote free exchange of exports and imports. We commend efforts to acquaint our investing public with the necessity of purchasing debentures issued by such institutions against approved foreign securities for this purpose, so that eventually every community will serve its own vital interest in furthering our foreign commerce as a necessary component of domestic prosperity.

The reduction of loans and accumulation of banking reserves now permit, and the lower prices of many commodities justify, the extension of credits sufficient to accelerate recovery in certain lines. This should gradually thaw frozen credits and end stagnation. It will further provide increasing export and import cargoes for our now partially idle merchant marine and contribute to restoration of economic equilibrium in countries suffering from war debts and inflated currencies and to a proper distribution of commerce in neutral markets.

It is manifest that while many products of our soil have been reduced in value to pre-war levels, a number of manufactured products remain too high in cost of production to compete in neutral markets with foreign goods. It is essential that the substantial reduction in cost of living, which has already occurred in food products and other basic commodities, shall be followed by economies in cost of production until a stable balance of values of all commodities and productive effort is established. No readjustment, however, can be complete without reduction of costs of railroad transportation both for domestic and export shipment. Continuance of our present cost of finished merchandise would maintain unreasonable expense of living and put our products in a non-competitive position in markets of depleted purchasing power.

To insure such equality of treatment, the American tariff, whatever its underlying principle, should provide for additional duties on imports from nations discriminating, by tariffs or administrative practices, against the trade of the United States.

The foreign service of the United States should be reorganized and established under a unified supervision which will promote its efficiency, both in diplomatic representation and in the collection and dissemination of commercial information. This reorganization should provide for a permanent career through the establishment of a national training academy for the foreign service, which will attract competent and ambitious young men into a life work of constructive effort in their country's service.

The convention urges upon Congress the vital importance of prompt action upon measures affecting our foreign trade now pending before it. Chief among those calling for immediate enactment are the increases of appropriation that will provide for much needed expansion and improvement in the Bureau of Foreign and Domestic Commerce and in the Bureau of Standards in the Department of Commerce.

THE ILLINOIS CENTRAL recently organized a committee of officers and employees to act as a General Fuel Conservation Committee. J. F. Porterfield, general superintendent of transportation, has been appointed chairman of the committee.

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Railroad Hearings Before Senate Committee

Railroads Not Asking New Legislation—Wages Must Be Reduced in Order to Reduce Rates

WASHINGTON, D. C.

HEARINGS before the Senate committee on interstate commerce, pursuant to the Senate resolution directing an inquiry into the general railroad situation, were begun on Tuesday, May 10.

In opening the hearing, Chairman Cummins read into the record statistics showing that while operating revenues have increased since 1913, there has been a greater increase in operating expenses so that for the year which ended on March 1, 1921, the net operating income was only \$2,578,922 compared with \$787,610,435 in 1913. In the latter year, the ratio of operating expenses to operating revenues was 69 per cent while in 1917 it was 70 per cent, in 1918, 73 per cent, and for the year which ended on March 1 last, 94 per cent.

"The railroads received during the year, up to March 1, 1921, as I have stated, \$6,175,962,718 as operating revenues," he said. "I think it can be said without very much doubt that that is a larger revenue than the railroads will ever receive again for the same volume of business. The operating expenses, together with taxes and the adjustment of equipment rents and joint facility rents, consumed all of that sum except \$2,578,923. So we have before us the problem, I think, of trying to ascertain whether the \$6,000,000,000 and more received as operating revenues were wisely and economically and efficiently expended. If we can not increase the revenues, and I think we have reached our limit in that respect for the same volume of business, it is apparent that expenses must be reduced in some way or other if the railroads of the country are to be successful in their operations.

"That situation had led me to ask the railway executives to appear, in the first instance, and give the committee the benefit of their knowledge and their observation with regard especially to the enormous expenses of 1920, so that we might find out, possibly, some way to assist in the operation of these railroads that would enable them to continue in operation, for it is perfectly obvious that if this condition is to be a permanent one a very grave situation confronts the people of the United States. I have therefore asked Mr. Thom, who represents the railway executives, to present the showing which the railroad companies desire to make with regard to this very vital matter."

Because of this situation, he said, he had asked the railroad executives to appear for the purpose of furnishing the committee information which might enable it to assist in meeting the situation, adding that it is "obvious that if this situation is to be permanent a very grave situation faces the people of this country."

Julius Kruttschnitt, chairman of the Southern Pacific, began the presentation of the railroad case, first reading into the record a preliminary statement by Thomas De Witt Cuyler, chairman of the Association of Railway Executives, which outlines the attitude of the executives toward the investigation, and following this with an extensive statement outlining the history of the causes that have brought the railroads to their present condition. Mr. Cuyler said in part:

The Association of Railway Executives welcomes the inquiry undertaken by the Senate.

In a general way, the following will indicate the spirit which will pervade the testimony to be offered by the railroads:

The transportation service of this country is passing through a crisis. It is not a crisis peculiar to the railroads of the United States. It is a situation of world-wide incidence arising from perfectly understandable causes, most of them having their origin in the world war.

Feeling, as we do, that the world has definitely turned the corner of its most acute depression, so we feel that the railroad situation has likewise passed through its darkest hour and has now definitely turned for the better.

The last Congress in passing the Transportation Act, placed upon the statute books the most constructive measure dealing with our transportation situation which had been enacted into law in the past fifteen years.

Difficulties Not Due to Transportation Act

The Transportation Act has not broken down; the present difficulties of the railroads are not due to the Transportation Act, and the Transportation Act provides effective machinery for remedying, in so far as it may be done by national legislation, the difficulties in which the railroads now find themselves.

The managements of the railroads do not approach Congress or the American people asking for any amendments in existing national legislation. They desire to make perfectly clear their present situation, and the measures they are taking and propose to take to work their way out of existing difficulties.

The railroad managers regret that the operation of inexorable economic laws makes it necessary that railroad wages should be reduced. But the railroad managers have no fight with their employees, and the supreme aim of every railroad management in America to-day is to establish its relationship with its employees on a basis of friendliness and co-operation which will result in work at satisfactory wages for the largest possible number of men and in an efficient and economical service to the public.

The Interstate Commerce Commission has a clear understanding of the real nature of the American transportation problem and has evinced its desire in co-operation with the public and with the railroad managements, to work out the difficult problems of regulation in a manner which will insure adequate facilities and complete protection to public interest.

The public also is manifesting a disposition actively to cooperate with railroad managers.

Railroad managements are fully aware of the feeling in many quarters that certain railroad rates are excessive, and the unremitting effort of the railroad managements of this country is to provide service of such economy and efficiency that it can be rendered at a rate which will promote the movement of the largest possible amount of traffic.

Facilities More Important Than Rates

The responsibility of railroad management is of course not alone to give low rates, but to provide adequate facilities. In times of prosperity the adequacy of facilities is of more consequence than the rate itself. So that if the railroad managers assent to a schedule of rates in time of depression which make it impossible for them to provide adequate facilities against a period of prosperity, they would be recreant to a duty they cannot escape.

The public and the Congress may rest assured that the railroad managers are straining every nerve so to reduce their expenses that they may be able at the earliest moment to adjust rates to changed economic conditions, and certainly to the end that no individual rate shall be so high as to interfere with the normal movement of a commodity.

The railroads have just emerged from a year of extraordinary expenditures, expenditures so large that even with greatly increased freight revenue they were unable to earn an appreciable sum upon the actual investment in American railroad property.

All Expenses to Be Accounted For

The railroad executives will explain to the Senate committee the reasons for these expenses. The railroads will show specifically that the greater part of the increased expenses of 1920 are due to causes over which the railroads had no control. The railroads will also show, I believe, that they are rapidly surmounting their difficulties and from now on will realize a progressively improving situation.

The eyes of the railroads are turned to the future, and the railroad managers are confident that as a result of the hearings before the Senate committee there will be a far better understanding on the part of the public of the whole railroad situation.

Mr. Kruttschnitt's statement was in part as follows:

In order to understand the problem which the committee has before it, and properly to apportion the responsibility for the

result, it must be appreciated that, except as either is affected by bad management, the railway operating revenues and more than 64 per cent of the railway operating expenses, being the labor costs, and in 1920, in addition, a very substantial part of the cost of materials and supplies which were purchased by the Railroad Administration during federal control, but used by the railroads at the prices paid, or contracted by the government to be paid, are fixed by the government—in other words, that the government prescribes the charges from which the operating revenues of the carriers come, and likewise fixes the wages which constitute more than 64 per cent of the operating expenses, and that the price of the necessary materials and supplies which the carriers must have are fixed either by the government as above stated or by economic forces beyond the power of the carriers to control. The narrow limits within which the powers of management may be exercised are thus manifest, and, of course, where there is a limit to power there is a corresponding limit to responsibility. At the same time, even within the limits of these restrictions, there is room for the play and for the effect of good or bad management, and the character of the management, whether good or bad, efficient or inefficient, is a legitimate and proper subject of inquiry. Care must be taken, however, to appraise justly the several causes contributing to the result and to apportion to each cause its due share of importance.

Expenses Largely Controlled by Government

Out of every dollar of operating expenses 30 cents were paid out for materials and supplies. The government operated the roads for two months of 1920 and accordingly agreed to the prices of materials and supplies for these months, as well as incurred all of the other operating expenses for these months. The government also purchased or contracted for a large quantity of materials and supplies which were passed over to the carriers on the return of the properties, and these materials and supplies, as used, were charged into the operating expenses for 1920 at prices fixed for the carriers by the government in making the purchases. It is conservatively estimated that one-half of the materials and supplies used in the year 1920 were thus necessarily charged into the operating expenses for that year at prices fixed for the carriers by the government.

Accordingly, 15 cents out of every dollar of operating expenses for 1920 were paid out for materials and supplies at prices thus fixed for the carriers by the government.

All operating expenses (other than for labor and material and supplies) for the first two months of 1920 amounted to about 3.5 cents out of every dollar of operating expenses for the year. These were incurred by the government and not by the carriers.

This means that the 64 cents out of every dollar of operating expenses were paid for labor at prices fixed by the government; that 15 cents out of every dollar of operating expenses was paid for materials and supplies, at prices fixed by the government, and that 3.5 cents, out of every dollar of operating expenses for the year 1920, was paid for other expenses incurred by the government in the first two months of 1920, or a total of 82.5 cents out of every dollar of operating expenses for the year 1920 was paid out at prices directly fixed by the government itself.

The remaining materials and supplies used during the year 1920 were purchased by the carriers at prices fixed by general market conditions and beyond their power to control, and which cost 15 cents out of every dollar of expense. In other words, prices fixed by the government or by market conditions cover 97.5 cents out of every dollar of operating expenses.

The especially narrow limits within which the efficiency of management might have become effective to control operating expenses for 1920, including transportation expenses, are thus apparent.

It follows that efforts to control expenses during that year were of necessity almost wholly confined to obtaining better results from labor and economical use and consumption of materials.

The difficulty of this task, in the midst of extensive unrest and disorganization of labor and of disturbed economic conditions generally, cannot be easily exaggerated.

Turning to an analysis of the railway operating expenses, there can be no proper dissent from the statement that by far the largest contributing cause to the abnormal amount of these expenses is the cost of labor.

The cost of labor to the carriers may be divided into two classes, the direct and the indirect cost. The direct cost of labor is the compensation paid by the carriers to their employees; the indirect is that part of the cost of materials and supplies which is caused by the labor service in creating them.

The history of the direct labor cost is interesting and in this inquiry is of substantial importance.

The labor bill of the carriers in 1916, which was before the Adamson Law took effect, stood at \$1,468,576,394. The increases since 1916, excluding switching and terminal companies, have thus been as follows:

1917.....	\$270,905,748
1918.....	874,331,209
1919.....	229,315,081
1920.....	855,087,919

or an aggregate increase since 1916 of \$2,229,639,957.

And the increase since 1917, the last year of private management prior to federal control, was \$1,958,734,209.

The figures given are actual. The increase made in 1920, however, was in force only a part of that year.

The labor costs, including switching and terminal companies for 1920, were \$3,742,486,936; for 1919 they were \$2,868,672,284, an increase in 1920 over 1919 of \$873,814,652.

If the increased scale had been in force during the whole year of 1920, the wage bill for 1920 would have been approximately \$3,980,000,000. This means that the labor costs to the carriers of Class I were actually greater in 1920 than in 1917 by more than 115 per cent, and that, if the increased scale had been in effect during the entire year 1920, the increase would have been about 128 per cent.

It must be noted that during the same period the gross revenues of the carriers increased less than 54 per cent.

It will also be noted that since the government took charge of the labor costs by the Adamson law in 1916 the labor costs have been increased by government action by \$2,229,639,957, the total for 1920 being \$3,698,216,351, and that before the government took charge the entire labor costs amounted to \$1,468,576,394.

The properties of these carriers had been taken possession of by the government for a vital and very sacred public purpose. There was a great and relentless agitation for increases in wages during the whole period of federal control, which included more than ten months of the period of actual war. The Railroad Administration deemed it best to yield to this agitation and granted the enormous increases which have been noted as made during that period. Manifestly the burden of these increased costs could not end with federal control but must be passed on to the owners with the return to them of their properties. Nor did the record end with the advances actually made during the period of government possession. For many months prior to the end of federal control still larger demands for increases in wages had been pending and these unadjusted demands were also passed along to the owners with the return of their properties. These were subsequently adjusted by the Labor Board. Thus the inevitable and the recognized effect of what the Railroad Administration did and of what it began and left incomplete was to burden and encumber these properties and their future management after the resumption of private operation with the necessity to meet and provide for an increase of cost for labor amounting to \$1,958,734,209 annually (the difference between the entire labor cost of 1920, excluding switching and terminal companies, \$3,698,216,351, and the labor cost of 1917, namely, \$1,739,482,142), which is greater by more than two hundred and nineteen millions of dollars than the entire annual labor cost at the time the government took possession, namely \$1,739,482,142.

It is a just cause of complaint against the director general that he neglected and refused to recognize and satisfy the moral obligation he was under to make, in the revenues of these properties, an increase corresponding with the enormous and destructive burden of expense which he had placed upon them and left the carriers to assume the burden before the public of seeking an increase of rates to meet the increase of expense which he had placed on them. It was easy to impose this increased burden upon the carriers. It would have been a most ungracious task to transfer it to the public. So this task was left to the carriers, and they were confronted at the threshold of resuming their relations with the public with the necessity to assume the responsibility of asking a large increase of rates. In equity this obligation was not theirs—it was the obligation of those who had created the necessity.

Freight Rates Not Responsible for Depression

Freight rates are not responsible for the business depression, Mr. Kruttschnitt said. Widespread propaganda is being carried on to arouse public sentiment against existing freight rates. The fact is that even since the rates have been advanced the cost of transporting commodities is far less than the toll taken by the commission merchant and the retailer. Consequently people are misled and conclude that high rates have stopped the movement of a large amount of freight and that the railways would make more money if they would reduce the rates and thereby revive the traffic.

There is the strongest reason to believe that the very great reduction in traffic has been due almost entirely to general business conditions, world-wide in their effect and that would have come if there had been no advance in freight rates.

Prices of commodities reached their maximum in the first

half of 1920 and thereafter fell with great rapidity in France, the United States and the United Kingdom.

The fall in the United States began in May and was rapidly on its way downward in September when the advanced rates took effect. Nevertheless, traffic did not drop for at least four months.

In the last four months of 1920, the net ton miles of revenue freight were 143,349,678,000, an increase of 7 per cent over the preceding year.

It was a general deflation and fall in prices from the heights to which they had been driven by war conditions that has caused a stagnation of business throughout the world.

That it is not caused by the cost of transportation, is convincingly shown by the fact that stoppage of buying has caused an over-supply of ships. Ocean tonnage rates have been recently at the lowest point in their history. Notwithstanding these low rates ocean traffic shows as great stagnation as rail traffic and millions of tons of shipping here and abroad are rusting in idleness.

Many commodities would not move even if the freight charges on them were abolished entirely because producers can find no market.

That the decline in business is not due to prohibitive freight rates is shown by the following examples:

In January this year the total tonnage of lines west of El Paso and Ogden operated by the Southern Pacific fell off 41 per cent. The combined intrastate freight tonnage in Arizona and Nevada declined 50 per cent although no increase in the intrastate freight rates in those states has been authorized or made effective. This decrease embraced grain, hay and livestock as well as ores and other commodities.

Of a Texas cotton crop of over four million bales, 40 per cent remains unmarketed. The average amount of increase in the inland freight rates to Galveston was 24½ cents per 100 pounds. On the other hand the ocean rate from Galveston to Liverpool has declined from \$1.98 per 100 pounds in August, 1920, to 45 cents in March so that the average cost of shipments from producing point to Liverpool has been reduced about \$1.28½ per 100 pounds. Obviously the freight rate is not responsible. Cotton shippers attribute it to absence of demand both foreign and domestic.

Of the total crop of 99,000 bales of cotton in the Imperial Valley of California, about 54,000 bales remain unshipped, notwithstanding that a rate is now obtainable through the Panama canal as low as the rail rate available last season before the August advance, and also notwithstanding that ocean rates to Yokohama have been reduced \$1.10 per 100 pounds and to Liverpool as above stated while the rail rates to Pacific rates were increased only 14 cents and to Galveston only 40 cents.

During September, October and November, 1920, 45 per cent less rice, 54 per cent less canned salmon and 77 per cent less dried fruit were exported than during the same months of the previous year, although the reduction in ocean rates was substantially more than the increase in inland rail rates.

A removal of all the recent increase of the rate on lemons would not help the California lemon grower. He has a rate by sea through the Panama canal of less than half (42 per cent) of the rail rate yet his lemons are not marketed.

More lemons were shipped from California in the four months, November, December, January and February (after the increase in freight rates), than were shipped in the corresponding months one year ago.

The real trouble is that the government has taxed the lemon grower heavily to create a glut of ocean tonnage which has lowered ocean rates to unheard of limits and Sicilian lemons are sold at \$1.25 a box in Eastern markets where the Californian must sell his fruit. The ocean highway is free and the Sicilian knows it. If Congress wants to help the Californian, it knows how it can easily do so but it cannot be done by interminable discussion and investigation of railroads.

On the basis of 54 heads of lettuce to the crate, the cost per head to the California grower is 6.7 cents. From personal experience at retail markets consumers have to pay from 20 to 25 cents a head for California lettuce and quite as much as for lettuce grown in the neighborhood on which there is no freight charge.

The facts about the freight rates on cantaloupes have been grossly misrepresented. From the report of the United States Department of Agriculture, Bureau of Markets, we find that the average sale price for the 1920 season in New York was \$4.82 a crate. The present freight rates plus refrigeration are \$1.84½ to New York and \$1.49 to Chicago. This leaves a profit to the operator on cantaloupes sold in New York of \$1.62½ per crate. The freight rates have been grossly misrepresented and the statement is made that sale at

\$3.50 yields a little over 30 cents profit. The average price of the cantaloupe laid down in New York in 1920 was not quite 11 cents. They were retailed at about 25 cents.

The percentage of freight charges to the average value of commodities shipped in the early part of 1921 is only two-tenths of 1 per cent greater than it was in 1914.

Remedies for Existing Conditions

The trouble with our railroads has been intensified by the results of 26 months of an experiment in government ownership and operation. The word "ownership" is used advisedly as the federal railroad administration treated the railroads as if they were absolutely owned by the government and turned them back to their owners helplessly bound in improvident agreements in the making of which their owners had no voice.

The first requisite for the prosperity of any property is the right to conduct its own affairs. Without this efficient operation is impossible. It is not a question of revenues and reasonable return as much as one of life and death to every industry in the land. Poor service no matter how low the rate is expensive and increases the cost of everything.

Some remedies easily applied and productive of great economies are:

1. Stop the use for common carrier purposes of highways built with public moneys without adequate tolls and proper regulations.

2. Make inland waterways built or improved at public expense carry themselves as to interest on cost and maintenance by regulating the common carrier traffic on them and by imposing adequate tolls.

3. Keep the United States government out of the business of operating steamships and stop the lavish expenditure of public money to provide coast to coast ocean transportation in competition with transcontinental railroads.

4. Tolls for use of the Panama canal should be sufficient to pay interest on its cost, operating expenses and maintenance.

5. Do not deprive transcontinental carriers of coast to coast traffic by inflexibly enforcing a strict long and short haul clause.

You call us here to tell you what ails the railroads. We have been telling regulatory bodies for years that railroads were subject to the same inflexible economic laws to which all other industries are subject.

The government having strangled the railroads into something like bankruptcy at last removed its hands and permitted a sudden increase in rates that should have been gradual and started at least 12 years ago. The difficulties with the railroads is excessive operating expenses and an abnormal amount of these expenses is the cost of labor.

These, then, are the directions in which we need and ask your help. You may well ask what the railroads propose to do to help themselves.

The railroad executives have exerted, are exerting, and will continue to exert every effort to increase efficiency of operation, as they realize since the passage of the transportation act to a degree greater than they ever did before their allegiance to the public as well to their shareholders.

Many absurd, impractical and totally indefensible estimates of possible savings to result from the adoption of numerous improvements have been made in the heat of discussion of pending issues with organized labor. These economies are to be made by the universal use of practices and devices of different degrees of merit, some of which have long been used by all roads and all of which are used by some roads. All the suggestions cost money and a great deal of money, and the proposal of organized labor is that the additional capital be invested, not for the benefit of those who provide it, nor for the benefit of the public to reduce rates, but generally and principally to permanently support wages on the inflated war level.

Some of the directions in which the joint and several efforts of the public, the carriers and their employees can help the situation are:

The public can help, among other ways:

1. By continuing the splendid co-operation that it has accorded the railroad since their return to their owners, in using equipment and other facilities intensively.

2. By modifying laws that limit the length of freight trains and compel the employment of unnecessary men.

3. By terminating Government made agreements that put a premium on inefficiency.

The carriers can help:

1. By increasing capacity of existing lines by reducing curves and grades.

2. By conserving fuel through educating enginemen and the use of improved devices.

3. By replacing obsolete locomotives, shops, and tools by

modern ones—matters of supreme importance on account of great increase in wages.

4. By eliminating every ounce of useless dead weight in locomotives and cars, remembering that it costs just as much to haul a ton of useless wood and iron as it does to haul a ton of dry goods.

5. By reducing delays at terminals and in transit through the provision of more second tracks, passing sidings, and terminals.

6. By extended use of power devices for handling freight, and other labor-saving devices.

7. By promoting common use of tracks and terminals wherever practicable.

The employees can help:

1. By increasing and ever increasing production in all departments of railroad service.

2. By loyal, earnest effort to reduce operating expenses to prewar costs, or better, in recognition of the generous increases in wages granted by public regulating bodies.

3. By conserving fuel and saving life, limb, and property through greater care and stricter observance of rules and regulations. Payments for loss and damage to freight increased from \$35,000,000 in 1917 to over \$104,000,000 in 1919, or \$40,000,000 more than they should have done after allowing for 8 per cent fall in traffic volume and 100 per cent increase in value of commodities.

Finally, managers and employees jointly can render incalculable service to their corporations and to the public by cultivating friendly, harmonious, and co-operative relations that were dangerously weakened during governmental control, and above all, by establishing a thorough realization of the obligation of public service, to which we all owe absolute fealty.

We do not wish to be understood as criticizing or disapproving the motives of public policy that determined the construction of the Panama Canal, highways, inland waterways, and ships. We recognize the first as a measure of national defense the last as indispensable to winning the war, whose cost, even if many times what it has been, would have been wisely incurred. The others are necessary for the development of our country and contribute largely to the pleasure and convenience of every one of us. But what we do criticize and protest most earnestly is the unrestricted use for common carrier purposes of these works, built with public money, to destroy the business of public service corporations built with private moneys dedicated to public use; and most of all do we protest against the entry by the United States Government, backed by the United States Treasury, into destructive competition with its own citizens.

Continuing his testimony on May 11, Mr. Kruttschnitt said in explaining the stagnation in railroad building:

In 1920, \$62,264,000 went as a return to those who paid for the properties while 60 times as much (or \$3,742,000,000) went to those who are employed on the railroads. This answers the question "why don't we build more railroads?"

The fall in rate of railroad construction began in 1905 and, with a negligible check in 1916, has continued ever since, so that the new mileage constructed in 1920 was less than the average in the five years from 1840 to 1845. New construction in 1920 was only one-eighth of 1 per cent of the existing mileage, and at this rate it will require eight years to increase it by 1 per cent.

Mr. Kruttschnitt pointed out that for the railroads of the whole country, increased expenses in 1920 over 1919 were as follows:

Actual expenses for 1920.....	\$6,163,138,341
Actual expenses for 1919.....	4,667,774,131
Increase for 1920 over 1919.....	\$1,495,364,210

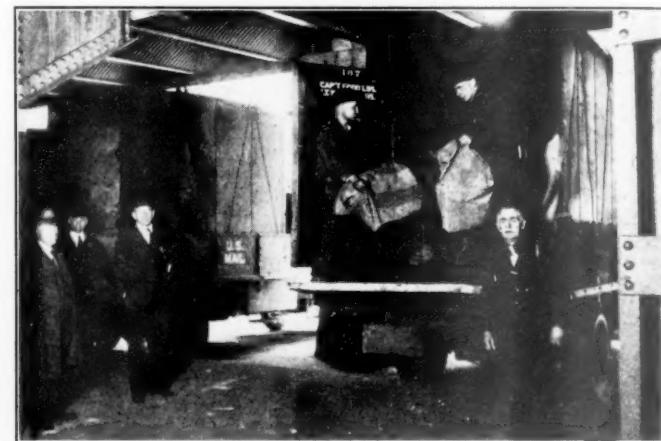
DETAILED AS FOLLOWS:

Increased cost of—	
Labor	\$884,148,739
Locomotive fuel	196,429,760
Cross ties	28,113,000
Insurance	20,160,000
Loss and damage	18,917,000
Stationery and printing	12,264,000
Depreciation	20,139,000
Track material	10,764,000
Water and lubricants	8,318,000
General supplies	29,741,000
Transportation expenses other than labor and items explained above	51,488,000
Valuation expense	1,887,000
Corporation war taxes	35,837,326
Other increases in taxes, rents and uncollectible revenues	52,771,359
Cost of R. R. Administration	7,168,000
Maintenance of way, materials and equipment not accounted for above and deferred federal maintenance	121,420,000
Total increase in expenses above explained.....	\$1,499,566,184
Actual or net increase in expenses.....	1,495,364,000

Mr. Kruttschnitt was to return for questioning by the committee on May 12.

Container Car Expedites Mail Service

NEW RECORDS for speed in the handling and transportation of mail in quantities were established in a recent test of the container car system of the New York Central in the government mail service. The saving of time due to the elimination of handling enabled a mail train from New York to make connections at Chicago which had not been made heretofore and in some instances 12 to 14 hours were saved by placing the pouches on earlier fast trains.



Loading Containers with Mail Sacks at the Post Office

This demonstration opens a new field of usefulness for the container system of transportation which has already been successfully applied to express and l.c.l. freight.

For the test in mail service the express type of container car was used. The nine portable containers were filled with mail at the postal stations, seven being filled at the Grand Central Terminal and the remaining two at the New York general post office. They were then transported by motor truck and loaded onto the car at the Thirty-third street



Unloading the Containers at Twelfth Street Yard, Chicago

yards of the New York Central. Loading the mail into the containers consumed an average of 15 min. The trucks were transferred from the Grand Central Terminal to the yards in an average of 15 min., and from the general post office to the yards in an average of 5 min. each. The containers were loaded from the trucks to the car in an average of 3 min. each, or 27 min. for the nine.

The mail matter carried on the car weighed 34,650 lb. and was made up of 894 sacks, 336 parcels of parcel post matter and 11 registered pouches of valuable mail, a total of 1,241

separate packages. The total weight of mail carried was considerably above the average weight hauled in the present standard mail car which usually carries about 30,000 lb. A single container carried 150 sacks weighing 5,090 lb. and the container car can readily carry a total of 50,000 lb. or more.

Upon arrival at Chicago at 8 a.m., Saturday, May 7, the car was immediately switched to the crane at the Twelfth street yards and was set for unloading at 8:10 a.m. The nine containers were all unloaded and placed on trucks in 21 min., the average time for unloading being 2.3 min. each. The last container left Twelfth street at 8:31 a.m. Delivery at various destinations in the city were made as follows:

Container No.	Destination	Time delivered	Connecting trains due to leave
105	Dearborn street station.	8:21 a.m.	A. T. & S. F. 9:25 a.m.
107	Main post office.....	8:26 a.m.	.....
102	Northwestern depot.....	8:34 a.m.	C. & N. W. 9:00 a.m.
103	South end Union depot.....	8:31 a.m.	C. B. & Q. 9:30 a.m.
110	South end Union depot.....	8:38 a.m.	C. B. & Q. 9:30 a.m.
106	North end Union Depot.....	8:45 a.m.	C. M. & St. F. 9:45 a.m.
101	North end Union depot.....	8:45 a.m.	C. M. & St. F. 9:45 a.m.
108	Parcel post branch, Main post office, Eleventh and State streets.....	8:39 a.m.	.....
111	Parcel post branch, Main post office, Eleventh and State streets.....	8:54 a.m.	.....

*Delayed 12 minutes at track crossings.

If mail had been available, the car could have been reloaded within two hours after its arrival. The containers were locked and released by the post office department one hour before the departing time of train No. 2, 1 p.m. An average of 15 min. was consumed in bringing them from the La Salle street station to the loading point and the containers were loaded from the trucks to the car in an average of 2 min. each. On the return trip the containers carried 37,220 lb. of mail matter in 1,248 separate packages, including 69 pouches of registered mail.

The test was authorized by Postmaster-General Hays and a committee of officials of the post office department were aboard the train that carried the container car. Representatives of the New York Central also were present and supervised the test trip.

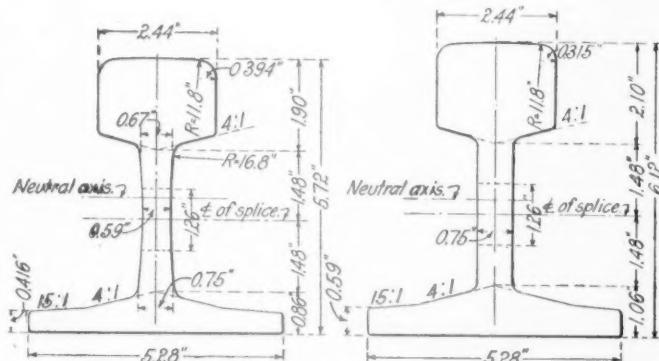
The advantages of the container car method of handling mail may be summarized as follows: It eliminates the possibility of theft or loss of valuable mail while in transit due to the fact that the container cannot be opened until it is removed from the car by the use of a crane. The container will also prevent a repetition of the numerous recent thefts of mail from trucks carrying it from post offices to railroad stations. The system reduces to a minimum the damage to parcel post or other mail in transit. It effects a saving in the cost of handling, both in labor and in trucking, and a material saving in the use of equipment. The possibility of quick transfer at important points and the maintenance of close train connections is an important advantage. The container makes it possible to restore the practice of maintaining ten or more separations in loading cars which cannot be done with solid car loading as now practiced.

New Standard Rail Sections for French Roads

FTER AN EXTENDED investigation six of the principal railroads in France have adopted four new standard rail sections. This subject is of particular interest to American railway engineers owing to the fact that the investigation included the study of some American rail sections, but these were abandoned in favor of new sections which conform very closely to the general outline of sections previously used in France. The four sections adopted are shown in the illustrations and include a 26-kg. section for narrow-gage tracks, a 36-kg. section for light traffic, stand-

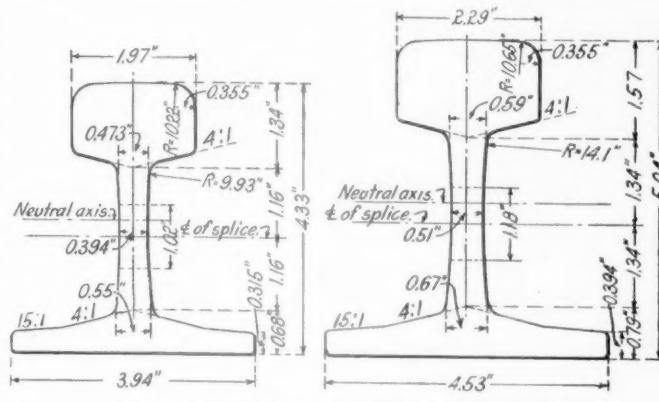
ard-gage lines, a 46-kg. section for light traffic, standard-gage lines and a 55-kg. section for use in tunnels where the action of moisture and smoke results in rapid loss of metal.

It is to be noted that these sections retain the double bevel



46-kg. (92.8 lb.) Rail, 55-kg. (110.9 lb.) Rail for Tunnels

on the top surface of the base in conformity with prevailing French practice. Three of the rail sections have curved faces on the webs and the base widths are appreciably less than the height. Consideration of a great many types of rail splices



26-kg. (52.3 lb.) Rail, 36-kg. (72.6 lb.) Rail

finally resulted in a decision to continue the use of fish plates like those in general use in France, although the thickness has been increased appreciably over that of the types previously used.

American Railway Development Association

THE American Railway Development Association, formerly the Railway Development Association, held its thirteenth annual meeting at Hotel Pennsylvania, New York City, on Wednesday, Thursday and Friday of this week. The opening session began on Wednesday forenoon, the 11th, with President H. O. Hartzell (B. & O.) in the chair and Secretary J. B. Lamson (C. B. & Q.) acting as secretary of the meeting.

The first address was by Charles H. Herty, editor of the Journal of Industrial and Engineering Chemistry, New York city, who gave a rapid sketch of ways in which railroads could develop traffic in their respective territories by spreading knowledge of how natural resources can be made more valuable in ways that the chemist can explain to them. Railroads have developed vast territories by the aid of the geologist; but the day of the geologist is largely past. The chemist has not been duly appreciated. Not a railroad in America

has made a thorough chemical survey of its territory, though a few companies have done a little at it.

The railroad chemist, to cover the field adequately, should be a man of strong character, imagination and initiative. He should be close to the president, not merely an information bureau; not content to wait for people to come to him, nor to be merely an analyzer of water, oils, steel and paint. Men of this kind are scarce, and a good salary will be necessary.

In the discussion following this address mention was made of the former annual chemical exhibition held in New York city. Mr. Herty hopes to revive this. A member said that the Technology Club, New York city, could furnish a list of chemists open to engagement.

A Shipper's Views

B. J. Case, of Sodus, N. Y., speaking on the transportation of perishables from a fruit grower's standpoint, told of experiences in that business in central New York. Shipments of peaches have been increased in volume in that region in 15 years several hundred per cent but the risks of the business due to uncertain seasons and fluctuations in crops are considerable, and the hearty co-operation of the railroads is of vital importance. For example, the distribution of fruit cars last year, when New York growers felt aggrieved at what they deemed undue favoritism toward other regions, left a shortage at a critical time; and a thousand carloads of peaches were left in the orchards unharvested. Consumers could have been found for those peaches if the fruit could have been shipped at the right time.

How to Secure Desirable Settlers for Vacant Lands

E. F. Benson, manager of the department of immigration and industry of the Northern Pacific, in a paper on this subject, presented a strong plea for the establishment of community development associations; only by intelligent co-operation can satisfactory progress be made. To get a man to buy a farm is not enough. The individual with \$2,000 can perhaps take a farm, but the necessary stability, enterprise and intelligence can be had only by co-operative effort.

Of American farms, only 62 per cent are operated by their owners. If that percentage cannot be increased the country is in danger. We see in the downfall of the Roman empire a deadly parallel to tendencies now working in this country. We have warnings on all sides today. The trouble in Russia is due to the ungratified ambition of the masses to own land. A similar ambition among the peons of Mexico accounts for the last ten years of trouble in that country. Denmark, by state action, has made itself a prosperous country of small farms. Even Ireland has in the last ten years been greatly improved by the Irish land bill.

The California experiment was started by Dr. Leeds, who, in 1914, brought to that state the lessons of experience in Australia. The state appropriated \$260,000 in 1917 and a million in 1919. Secretary F. K. Lane, in his recommendations for lands for soldiers, took this experiment as his guide.

The Wisconsin plan is the better one, in Mr. Benson's opinion. Legislatures are only very slowly convinced of the wisdom of appropriating public money, but the Wisconsin Colonization Company (headquarters at Eau Claire) advances the necessary money and thus far has paid good dividends; and has satisfied its patrons. The State Immigration Department cooperates with it. The president of the company will give all desired information. The company does not build houses for patrons, but lends them half the necessary money. It aids them in getting good and tasteful modern houses at a low price. The speaker could see no reason why schemes of this kind could not be worked as well in Maine or California as in Wisconsin.

In the discussion on this paper Mrs. Fullerton (Long Island) described the work of her road in promoting the

prosperity of small farms. County home bureaus are doing good work of this kind all over New York state. C. L. Smith (O. W. R. R. & N. Co.) related some of his experiences. He devotes much attention to home building. A colonization enterprise in Northern Minnesota was mentioned.

Reforestation of Cut-Over Lands

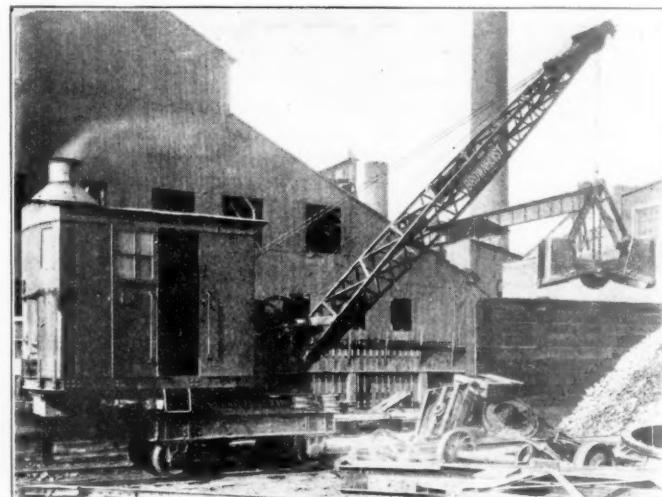
W. S. Ayres (New Orleans Great Northern) read a comprehensive and instructive paper on the timber problem in the great level country of the south, where 155 million acres have been denuded. Millions of acres are being reforested but much more needs to be done. At Bogalusa, La., this summer there is to be a forestry school, continuing six weeks.

In the discussion it was stated that the Canadian Pacific sends out a train with forestry lecturers every summer, three weeks being spent in the work. The use of trees as wind breaks or snow fences was mentioned, but results are not always satisfactory. The Canadian Pacific is trying hemp as a snow fence. It is an annual and grows ten feet high.

The rest of the proceedings of the meeting will be reported in a later issue.

A New Brownhoist Locomotive Crane

DURING THE PAST few years, many roads have found it economical to handle their coal, ashes and other materials by a locomotive crane. This has been necessary because rapid handling is often essential and because the crane is so much more economical than hand labor. Up to the present time, however, most of these cranes were



The Crane in Use in Material Yard

large capacity machines and too big to be economical for many small jobs. The saving effected by cranes on these larger operations has created a demand for a smaller type which can be used economically where there is not so much material to be handled.

With the idea of filling the need for a smaller capacity crane for this work, a new Brownhoist No. 2 locomotive crane has been developed. This machine can be changed in a few minutes' time to handle either a grab bucket, bottom block or lifting magnet. The new crane will do the same work as the larger types within its capacity. It is built to handle a one-yard bucket, hook loads of 5 tons, or a 36-in. magnet.

In order to meet the different working conditions, these new cranes are made to operate by steam, electricity or gasoline engine. They are built for use on railroad trucks, traction wheels or creeper trucks. This new crane has just been added to the other types of locomotive cranes built by the Brown Hoisting Machinery Company, Cleveland, Ohio.

General News Department

The American Association of Dining Car Superintendents will hold a special meeting at Chicago in connection with the National Hotel and Restaurant Week, commencing July 12.

Thirty-nine brakemen have already been dismissed, or transferred to other work, on the Pittsburgh division of the Pennsylvania Railroad, on account of the repeal of the full-crew law of Pennsylvania. These men were on through passenger trains.

The Southern Pacific, with its oil burning locomotives, runs passenger trains from New Orleans to El Paso, 1,194 miles, with only two changes. The runs are from New Orleans to Houston, 362 miles; Houston to Del Rio, 380 miles and Del Rio to El Paso 452 miles.

The hearing before an examiner of the Interstate Commerce Commission regarding the expenditures of the Pennsylvania Railroad for locomotive repairs made by the Baldwin Locomotive Works was resumed at Washington on May 9. J. T. Wallis, chief of motive power, was the principal witness.

The Great Northern has abolished its Havre division, effective May 5. The lines of this division from Havre, Montana, to Cut Bank have been added to the jurisdiction of the Montana division and the lines from Pacific Junction to Gibson, Great Falls to Shelby and Virden to Sweet Grass have been added to that of the Butte division.

The Railroad Commission of California has authorized the Sugar Pine Railway to discontinue service as a common carrier, since neither present nor prospective revenues are sufficient to justify further operation. The Sugar Pine Railway operates a standard gage line in Tuolumne County, Cal., from Ralph to Lion's Dam, a distance of 16 miles.

Train accidents investigated by the Bureau of Safety of the Interstate Commerce Commission in the last three months of 1920—October, November and December—numbered 34, and the summary of the reports of these investigations—No. 6—has just been issued. The list includes 13 rear collisions, six butting collisions, four miscellaneous collisions and seven derailments.

Four employees of the Columbus & Greenville were killed and several others injured as a result of the wrecking of a double-header freight train 15 miles west of Columbus, Miss., on April 30. The accident was caused by the tender of the second engine leaving the track as the train was backing down grade into Columbus, causing both engines to leave the track and overturn.

The Interstate Commerce Commission has announced a hearing on the protest filed by the Kansas City Southern to the supplemental tentative valuation recently issued by the commission at Kansas City, Mo., on May 25, before Examiner Hartman. A hearing on the protest of the San Pedro, Los Angeles & Salt Lake will be held before Examiner Hartman at Los Angeles on June 6.

Electrical Hazards and Safeguards Against Them, is to be the subject for discussion at the meeting of the American Society of Safety Engineers, at 29 West 39th street, New York, on Friday evening, May 27. H. S. Balliet, assistant terminal manager, Grand Central Station, will describe the safety equipment of that terminal, and there will be illustrated papers by C. O. Van Dannenberg, W. W. Samuels and L. E. Smith.

An exhibit of transverse and longitudinal fissures in rails is being displayed in the offices of Robert W. Hunt & Co., Chicago, as a means of acquainting railway men with the true character of these serious causes of rail failures. Of

particular interest are samples of rails containing fissures that have not yet resulted in complete failure and disclosing how very little evidence there is to indicate the presence of these dangerous flaws.

The Freight Claim Division, of the American Railway Association, will hold its thirtieth annual session at the Hotel Sherman at Chicago, on May 17, 18 and 19. Coronado Beach, Cal., had been selected as the place of meeting, and later Denver was substituted; but the present railroad situation made necessary a further consideration and Chicago was selected. The report of the committee on cause and prevention will occupy the attention of the members on the 18th.

The Signal Appliance Association, F. W. Edmunds, secretary, announces that in connection with the signal engineers' convention at Hotel Drake, Chicago, June 6-8, there will be a general luncheon each day, Monday, Tuesday and Wednesday, and a dinner on Tuesday evening; luncheon tickets to be on sale Monday morning and dinner tickets on Tuesday morning. Mr. Edmunds announces tentative plans for securing special cars from New York for Chicago on Saturday afternoon, June 4. Another circular will be issued later, and reservations from New York may be made through H. S. Balliet, secretary of the Signal Section, Grand Central Terminal, New York City. Mr. Edmunds suggests that members reserve rooms at the Drake Hotel without delay; rates for single rooms, \$5 to \$7 per day; double rooms, \$6 to \$14.

Misuse of monthly commutation tickets on the Long Island Railroad causes that company an estimated annual loss of \$100,000, and General Passenger Agent P. H. Woodward, in a second circular suggesting that possibly it may be necessary to require the holders of such tickets to paste on them their photographs, says that the stations where the worst offenders live are Far Rockaway, Arverne, Rockaway Beach, Rockville Center, Freeport and Bay Shore. It is further suggested that if citizens would co-operate with the railroads in securing a law imposing penalties for dishonest use of tickets, there would be no necessity of resorting to drastic measures to protect the revenue of the company. A law punishing unauthorized persons for selling, bartering or transferring tickets, now in force in Pennsylvania, accomplishes the desired results, says Mr. Woodward.

Acquisition by the government of all the railroad freight cars in the country at a fair depreciated value, has been proposed to President Harding by S. H. Barker, financial editor of the Philadelphia North American. Mr. Barker proposes that the government issue in payment 15-year serial car trust certificates which he says the railroads can sell readily if they bear a reasonable rate of interest, and thereby can raise additional funds needed for improvements. He has estimated that in this way the railroads could be provided with about \$3,000,000,000 at a cost of around 5½ per cent. Apparently no estimate was made of the amount of such certificates which would have to be given to the holders of the outstanding equipment obligations before the cars could be turned over to the government. The President offered to submit the plan to Senator Cummins if it were placed in written form.

Hearings before W. A. Colston, director of the department of finance of the Interstate Commerce Commission, on the proposal of the New York Central to acquire control of the Chicago Junction and the Chicago River & Indiana, were resumed at Chicago on May 3, when George B. Hanauer, vice-president and general manager of the Indiana Harbor Belt Line, took the stand. Mr. Hanauer maintained, under cross examination by Luthor M. Walter, that the change of the control of the property would be for the good of all con-

cerned and defended his position further under cross examination by representatives of various other interests, including Irving Herriott, attorney for some of the shippers who are opposed to the change and Walter L. Fisher, attorney for the Railway Terminal Commission of the City Council of Chicago. Mr. Fisher tried without success to get an admission that the plan would endanger the unification of all terminals at Chicago, as outlined by the Railway Terminals Commission of the City Council. Hearings during the first part of the week, commencing May 8, were concerned with the valuation of the property and will be continued throughout the week.

February Operating Statistics

The net ton miles of revenue and non-revenue freight handled by 170 Class I railroads for the month of February, according to the Interstate Commerce Commission's monthly bulletin, was 24,915,000,000 as compared with 32,958,000,000 in February, 1920. The average car miles per car day was 21.3 as compared with 22.3 in 1920, but the net tons per loaded car showed a slight increase, 28.4 as compared with 28.3. The average train load was 618 tons as compared with 675. The coal consumption in road service was only 5,792,000 net tons as compared with 7,505,000 in 1920. The percentage of serviceable cars was 9.8 as compared with 6.5 in 1920 and there were 7,463 unserviceable locomotives as compared with 7,730 in 1920.

Meeting of Railroad Division A.S.M.E.

A meeting of the Railroad Division of the American Society of Mechanical Engineers will be held on Thursday, May 26, at 10:00 a. m., in the Congress Hotel, Chicago, in connection with the spring meeting of the society. Three professional papers will be presented and discussed as follows: The Design of Large Locomotives, by M. H. Haig, mechanical engineer of the Atchison, Topeka & Santa Fe; The Needs for the 2-10-2 and Other Heavy Freight Locomotives for Road Service, by A. F. Stuebing, mechanical department editor of the *Railway Age*, and the Necessity for Improvement in the Design and Operation of Present-Day Locomotives, by H. W. Snyder, mechanical engineer of the Lima Locomotive Works. Following the discussions of these papers a business meeting of the division will be held.

Store Door Delivery

According to an announcement by the Federal Highway Council, Washington, D. C., store door delivery of freight is to be established in Baltimore, Md., plans for the enterprise having been agreed upon at a conference between merchants of the city and representatives of the Pennsylvania, the Baltimore & Ohio and the Western Maryland Railroad. A local committee, of which A. E. Beck is chairman, has been appointed to work out the details. General store delivery was in operation at Baltimore, and also at Washington, for several years but was finally abolished because of an order by the Interstate Commerce Commission, made after hearing various complaints, in which the conduct of the railroads in this delivery business was unlawful and discriminatory because of the use only in these two cities and not in other places.

Protests Against Valuations

Protests against the supplemental tentative valuations served by the Interstate Commerce Commission on March 31 have been filed with the commission by the Kansas City Southern, the Atlanta, Birmingham & Atlantic and the Winston-Salem Southbound. The Kansas City Southern declares that it had introduced evidence that its property was worth \$80,000,000 and the commission has given no analysis of the methods by which it found the property to be worth a smaller sum. It is stated that the commission has ignored the earning power of a carrier, which is the most important, if not the controlling factor, and it has apparently ignored the stock and bond value, which for the five-year period preceding the valuation was approximately \$62,000,000, or \$13,000,000 greater than the final value found by the commission. The protest

also enumerates various items which it asserts the commission has not taken into consideration.

The Winston-Salem Southbound protest objects to the finding of a final value less than its original cost.

A Canadian View

Hon. F. B. Carvell, chairman of the Board of Railway Commissioners for Canada, in a recent speech at Calgary, Alberta, responded to the calls for a general reduction in freight rates by saying that three essential preliminaries would be: a rearrangement of the working conditions of railroad employees; a reduction in service and a reduction in the price of coal.

"A healthy situation for the railways is just as necessary to the west as sunshine and rain. Without railways the west would still be the home of the Indian and the buffalo."

Mr. Carvell briefly reviewed conditions. It took, he said, \$22,000,000 for the Canadian railways to pay the retroactive part of the Chicago award. The payroll for the Canadian National prior to the McAdoo award was \$43,265,000. It was estimated the payroll for the present year would be \$81,347,000. The Canadian Pacific payroll prior to the award was \$56,190,000. The estimate for this year was \$100,000,000. He would like to see the day, he said, when Canadian business men, Canadian railwaymen and railway officials could gather round a table and settle their own differences, instead of adopting awards made in the United States.

Revenues and Expenses for March

A preliminary compilation of the returns to the Interstate Commerce Commission by 198 Class I roads for March show a net operating income of \$13,894,000 as compared with \$15,100,000 for March last year. The total operating revenues were \$458,000,000 as compared with \$459,000,000 last year. The operating expenses were \$399,000,000 as compared with \$419,000,000 last year, a reduction of 4.8 per cent. The preliminary report is as follows:

	1921	1920	Per cent of increase over 1920
Total Operating Revenues:			
Eastern District	\$205,864,936	\$204,085,540	0.9
Southern District.....	75,187,344	77,105,600	d 2.5
Western District	177,309,246	178,076,094	d 0.4
United States	458,361,526	459,267,234	d 0.2
Total Operating Expenses:			
Eastern District	183,721,741	197,523,582	d 7.0
Southern District	65,846,562	65,998,267	d 0.2
Western District	149,861,144	155,843,322	d 3.8
United States	399,429,447	419,365,171	d 4.8
Net Railway Operating Income:			
Eastern District	10,547,118	Def. 2,642,991	499.1
Southern District	5,268,444	8,526,446	d 38.2
Western District	15,078,503	9,217,282	63.6
United States	30,894,065	15,100,737	104.6

Business Men Endorse Secretary Hoover's Plan for Reorganization of Department

Plans for reorganization of the Department of Commerce and increasing its scope so as to make it more helpful to the business of the country were discussed at a conference at Washington on April 29, between Secretary Hoover and a large number of business men representing the most important industries of the country, whom he had invited for that purpose. The men attending the conference later drew up a letter addressed to the Secretary as embodying their views, which endorsed the opinion which he had previously expressed that the department should embrace all the non-regulatory bureaus of the government relating directly to industry (as distinguished from agriculture), to trade and to transportation. The letter said that the Department of Commerce had never developed to the scope implied in the act of Congress which created it. It was suggested that the whole statistical activities of the government relating to production, stocks, consumption and distribution, and movement of the basic commodities, excluding agriculture, should be concentrated in the department and the opinion was expressed that the basic industries would voluntarily aid the department in the collection of vital statistics.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1921

Name of road.	Operating expenses—						Net operating income (or loss).	Net after rentals.
	Average mileage operated during period.	Operating revenues—	Maintenance of equipment.	Transportation.	Traffic.	General.		
Alabama & Vicksburg.....March 141	\$198,359 \$23,469 127,916 171	\$58,338 182,114 82,144 20,089	\$76,980 \$75,602 \$75,657 184,878	\$9,087 \$135,051 \$39,354 \$10,609	\$12,805 \$24,076 \$19,123 \$10,609	\$29,738 \$75,528 \$38,422 \$23,040	-\$35,613 -\$12,401 -\$18,634 -\$37,379	-\$31,324 -\$122,401 -\$18,634 -\$30,921
Vicksburg, Shreveport & Pac. ....March 171	1,035,522	184,878	271,895	30,245	434,441	42,091	63,113	-13,459
Ann Arbor	294	279,668	57,222	360,071	90,774	194,779	14,304	14,902
Atchison, Topeka & Santa Fe....March 204	591,139	1,159,908	1,123,899	1,331,196	258,826	1,075,553	10,914	10,914
Atchison, Topeka & Santa Fe....March 208	8,828	20,700,581	12,597,174	44,415,003	9,071,255	10,391,896	1,119,455	3,494,563
Gulf, Colorado & Santa Fe....March 3 mos.	5,551,311	1,181,801	2,186,655	1,640,716	126,146	2,877,810	82,120	2,666,984
Panhandle & Santa Fe....March 3 mos.	610,184	119,908	2,178,882	1,466,558	62,330	220,462	6,194,657	51,268
Panhandle & Santa Fe....March 3 mos.	8,160,373	378,746	526,368	21,895	798,340	22,137	707,584	193,34
Atlanta & West Point.....March 93	112,221	81,609	225,349	30,477	55,950	6,759	94,036	12,148
Western of Alabama.....March 133	304,736	259,100	641,410	20,065	59,287	22,770	270,828	34,938
Atlanta, Birmingham & Atlantic.....Match 639	107,348	140,38	132,426	33,709	19,531	108,359	13,175	19,21
Atlanta Coast Line.....March 4,888	6,39	581,112	140,140	80,754	68,210	58,293	51,694	125,079
Charleston & Western Carolina.....March 344	279,582	18,886,975	7,112,880	863,567	92,526	202,248	154,782	56,567
Baltimore & Ohio Term.....March 91	12,636,208	5,947,475	19,886,975	2,676,621	4,001,398	9,018,326	442,120	16,639,179
Baltimore & Ohio Term.....March 3 mos.	12,636,208	5,947,475	19,886,975	2,676,621	4,001,398	9,018,326	442,120	16,639,179
Bingham & Garfield.....March 3 mos.	2,162,450	16,217,390	1,466,108	3,353,701	280,939	1,666,363	42,472	1,200,553
Boston & Maine.....March 2,300	3,933,251	1,917,844	3,494,817	1,036,931	1,356,727	1,748,636	19,306	247,568
Brooklyn Eastern District Term.....March 9	11,218,286	5,540,555	18,293,838	3,600,868	4,583,999	185,937	11,242,977	11,306
Buffalo, Susquehanna R. R. Corp. ....March 24	2,162,279	105,619	108,688	4,965	382,106	13,926	616,303	104,22
Buffalo, Rochester & Pittsburgh.....March 590	623,066	102,095	746,148	120,238	201,843	3,815	249,456	7,021
Belt Ry. Co. of Chicago.....March 31	1,830,905	265,440	2,163,384	394,268	547,476	11,938	705,895	65,546
Bessinger & Lake Erie.....March 3 mos.	2,162,450	1,431,038	47,161	53,135	1,145	229,722	9,957	340,670
Bingham & Garfield.....March 3 mos.	2,162,450	1,431,038	47,161	53,135	1,145	229,722	9,957	340,670
Bingham & Garfield.....March 3 mos.	2,162,450	1,431,038	47,161	53,135	1,145	229,722	9,957	340,670
Central Vermont.....March 291	1,402,415	65,989	372,245	25,030	66,303	13,355	171,984	1,02,410
Canadian Pacific Lines in Maine.....March 291	825,451	1,473,938	1,066,567	91,549	169,772	10,646	543,508	149,949
Carolina, Clinchfield & Ohio.....March 291	524,056	41,255	580,419	105,859	202,014	21,988	118,920	12,250
Central of Georgia.....March 1,914	1,364,908	1,518,471	5,293,504	948,768	417,143	69,844	93,025	184,838
Central of New Jersey.....March 686	3,335,159	609,127	4,259,019	34,828	38,666	2,180,881	237,985	5,347,334
Chicago & Eastern Illinois.....March 1,131	1,627,061	2,027,657	12,271,401	1,07,200	2,787,733	105,613	103,334	3,022,558
Chicago & North Western.....March 1,131	4,043,143	1,361,988	2,119,264	231,140	902,715	39,997	343,602	10,225,220
Chesapeake & Ohio.....March 2,452	1,040,874	1,473,938	1,473,938	1,313,307	1,054,635	1,054,635	1,054,635	107,654
Chicago, Burlington & Quincy.....March 2,543	5,042,065	964,318	6,367,344	927,447	1,458,339	66,767	5,294,285	1,02,410
Chicago Great Western.....March 1,496	4,290,238	1,300,357	5,090,466	2,060,526	1,546,242	204,881	2,764,432	194,834
Chicago Junction.....March 12	1,235,431	439,511	1,235,431	1,235,431	45,642	160	204,236	146,427
Chicago, Milwaukee & St. Paul.....March 10,621	8,694,407	2,317,431	11,995,681	1,090,598	3,268,458	175,683	6,037,890	146,242
Chicago, Milwaukee & St. Paul.....March 10,611	23,822,215	6,746,035	33,735,582	3,173,449	9,836,452	508,795	18,142,024	1,506,374
Chicago, Milwaukee & St. Paul.....March 3 mos.	23,822,215	6,746,035	33,735,582	3,173,449	9,836,452	508,795	18,142,024	1,506,374

Increase
(or dec.)
comp. with
last year.

REVENUES AND EXPENSES OF RAILWAYS

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Average mileage operated during period.											Operating expenses—						Net from railway operation.							
Name of road.		Operating revenues—			Maintenance of way and structures.			Total passenger traffic.			Transportation.			General.			Operating ratio.			Operating income (or loss), rental.				
		Freight.	Passenger.	(inc. misc.)	Total	Way	Equipment.	Total	General	Traffic.	Portion.	Total	General	Traffic.	Trans.	Portion.	Total	General	Traffic.	Trans.	Portion.	Total		
Chicago, Rock Island & Pacific	March 7,662	\$8,005,151	\$2,493,790	\$11,261,760	\$1,295,138	\$2,364,763	\$159,270	\$4,734,544	\$267,857	\$8,863,913	\$78,71	\$2,307,847	\$2,037,473	\$1,736,776	\$1,551,467	\$1,736,776	\$2,307,847	\$2,037,473	\$1,736,776	\$1,551,467	\$1,736,776	\$1,551,467		
Chicago, Rock Island & Gulf	3 mos. 7,662	7,366,370	3,097,327	4,117,672	6,826,497	512,008	14,382,277	796,449	26,771,946	80,10	4,537,381	3,032,938	1,974,467	-82,129	1,974,467	3,032,938	4,537,381	26,771,946	80,10	25,319	-82,129			
Colorado & Southern	March 461	447,250	1,014,995	1,462,241	7,346	6,672,812	19,220,701	12,114,555	50,804	47,054	78,16	13,275,8	11,886,964	11,886,964	11,886,964	13,275,8	50,804	47,054	78,16	12,114,555	50,804	47,054	78,16	
Chic., St. Paul, Minn. & Omaha	3 mos. 461	1,355,468	3,311,765	1,749,879	25,908	23,740,504	594,555	35,928	1,273,048	86,97	48,645	1,521,016	2,391,174	92,43	183,459	45,597	155,914	249,454	1,273,048	86,97	17,551	249,454	1,273,048	86,97
Chic., Terre Haute & Southeastern	March 3 mos. 374	1,469,161	6,321,392	2,442,634	63,025	6,874,740	63,025	1,785,455	1,882,916	249,259	6,638,223	40,275	106,119	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525	
Wichita Valley	March 3 mos. 1,099	2,615,512	548,145	3,387,717	311,167	915,746	9,756	160,608	21,113	332,498	116,03	-45,933	-61,574	-70,986	-59,390	-59,390	-61,574	-70,986	-59,390	-59,390	-59,390	-59,390		
Cincinnati, Indianapolis & Western	March 321	201,737	55,451	286,565	4,496	913,182	30,839	463,770	71,881	54,585	811,274	203,720	115,63	-159,593	-178,214	-185,886	-144,444	-144,444	-178,214	-185,886	-144,444	-144,444	-144,444	
Colorado & Southern	March 1,059	274,749	170,188	1,014,995	99,688	252,036	34,145	1,240,502	163,175	2,686,243	79,29	701,474	463,004	559,839	-204,137	559,839	123,525	1,23,525	1,23,525	1,23,525	1,23,525	1,23,525		
Fort Worth & Denver City	March 454	666,957	1,442,611	2,743,235	239,987	69,076	172,936	574,373	11,060	319,661	114,485	617,624	65,86	30,106	293,519	297,490	403,104	297,490	403,104	297,490	403,104	297,490		
Wichita Valley	March 3 mos. 454	1,912,923	66,310	2,743,235	239,987	246,662	170,170	203,263	24,471	60,330	1,605	34,250	7,06	80,195	71,582	63,898	34,634	71,582	63,898	34,634	71,582	63,898		
Columbus & Greenville	March 256	310,055	88,753	449,981	96,694	246,662	24,471	24,471	24,471	195,347	4,860	34,250	7,06	125,732	109,143	73,758	-27,274	109,143	73,758	-27,274	109,143	73,758		
Delaware & Hudson	March 880	318,6310	299,724	3,632,907	447,715	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611	1,442,611			
Delaware, Lackawanna & Western	March 880	998,538	892,454	11,309,525	1,314,807	3,484,370	121,050	5,274,911	490,036	10,740,078	94,96	569,446	326,331	408,715	1,177,749	1,177,749	1,177,749	1,177,749	1,177,749	1,177,749	1,177,749	1,177,749		
Denver & Rio Grande	March 2,553	1,778,653	438,760	2,371,221	281,901	555,570	41,977	865,859	88,689	1,877,514	83,88	1,521,758	817,179	1,019,925	-119,811	1,019,925	-119,811	1,019,925	-119,811	1,019,925	-119,811	1,019,925		
Denver & Salt Lake	March 255	164,164	22,196	197,835	40,659	567,445	129,054	238,678	238,678	6,605	6,675	222,422	112,41	-24,586	-32,592	-14,044	-24,586	-32,592	-14,044	-24,586	-32,592			
Detroit & Mackinac	March 3 mos. 374	122,399	283,467	97,838	410,910	65,463	138,851	8,284	218,099	218,099	21,736	451,500	109,98	40,990	-68,876	-48,417	-61,171	-68,876	-48,417	-61,171	-68,876	-48,417		
Detroit & Toledo Shore Line	March 62	213,300	16,303	21,507	31,197	62,273	61,294	101,257	8,981	193,691	20,754	56,167	70,92	62,737	48,737	36,664	48,737	36,664	48,737	36,664	48,737			
Detroit, Toledo & Ironton	March 454	413,736	16,203	439,052	78,839	87,049	25,64,768	237,217	20,541	170,196	16,181	35,297	63,94	38,516	171,186	183,186	181,404	171,186	183,186	181,404	171,186	183,186		
Duluth, Missabe & Northern	March 3 mos. 291	189,677	215,257	215,257	61,190	61,190	61,190	30,018	3,428	68,122	6,617	152,970	70,92	62,737	181,386	91,619	44,325	181,386	91,619	44,325	181,386	91,619		
Duluth, Winnipeg & Pacific	March 178	247,810	39,396	247,810	70,078	215,535	39,338	4,486	572,165	62,191	21,736	209,076	27,06	1,159,689	-1,159,689	-1,159,689	-1,159,689	-1,159,689	-1,159,689	-1,159,689	-1,159,689			
Elgin, Joliet & Eastern	March 836	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 21	5,785,442	641,222	6,326,569	61,666	21,613,573	41,666	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573	21,613,573			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371	1,452,371			
El Paso & Southwestern	March 3 mos. 456	1,459,342	126,136	1,452,371	1,452,371	1,452,371	1,452,371	1,4																

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.			Operating revenues			Maintenance of equipment.			Operating expenses			Net from railway operation.	Operating income (or loss).	Net after rentals.	Increase (or decrease) comp'd with last year.
	Freight.	Passenger.	Total	Inc. misc.	Structures.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Railway age					
Hocking Valley	\$730,555	\$113,592	\$843,337	\$35,007	\$44,029	\$10,765	\$37,961	\$36,742	\$976,441	118.61	-\$3,204	-\$178,635	-\$163,619	-\$25,252		
International & Great Northern	356	3,905,572	2,516,058	1,415,417	1,408,143	33,912	1,130,120	110,036	1,220,90	122.09	-\$1,619	-\$17,619	-\$1,192,361	-1,192,361		
Illinois Central	350	2,078,670	2,096,018	11,378,762	1,315,834	169,272	1,485,631	1,485,631	325,726	968,037	99,81	2,288,124	1,612,101	1,765,329	85,341	
Kansas City, Mex. & Orient, Valley	356	4,799	8,555,838	2,092,051	11,378,762	1,315,834	1,485,631	1,485,631	325,726	968,037	99,81	2,288,124	1,612,101	1,765,329	85,341	
Yazoo & Miss. Valley	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	
Kan. City, Mex. & Orient of Tex.	465	1,125,787	1,121,166	5,336,317	948,921	1,000,226	81,846	2,476,006	178,213	6,694,458	87.97	641,859	325,507	315,035	399,169	
Kan. City, Mex. & Orient of Tex.	465	1,125,787	1,121,166	5,336,317	948,921	1,000,226	81,846	2,476,006	178,213	6,694,458	87.97	641,859	325,507	315,035	399,169	
Kansas City, S. C. & Gulf	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	
Kansas City, S. C. & Gulf	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	3 mos.	
Lehigh & New England	272	1,379,985	145,529	30,776	36,180	5,516	75,944	13,020	161,437	100.96	-\$14,427	-\$14,427	1,317	65,892		
Lehigh & New England	272	1,379,985	145,529	30,776	36,180	5,516	75,944	13,020	161,437	100.96	-\$14,427	-\$14,427	1,317	65,892		
Lehigh Valley	277	1,311,824	1,610,421	196,598	291,215	45,817	115,273	60,273	162,778	73,969	2,078,370	1,318,642	318,212	312,817	239,271	
Los Angeles & Salt Lake	779	4,098,846	583,033	5,010,421	818,439	1,941,102	1,941,102	216,190	3,669,050	1,303,434	1,303,434	1,303,434	1,303,434	1,303,434	1,303,434	
Louisiana Ry. & Nav. Co.	13	1,172,686	18,188	206,273	19,921	20,990	4,315	7,419	21,559	12,075	10,050	10,050	10,050	10,050	10,050	
Louisville & Nashville	96	1,493,079	56,122	1,493,079	53,496	13,292	20,978	5,674	20,978	193	13,181	10,66	5,933	-12,053	1,440	
Louisville, Henderson & St. Louis	197	1,268,227	4,418	1,271,72	282,113	23,125	48,743	24,883	120,750	8,075	8,530	7,935	-10,354	4,778	96,059	
Midland Valley	399	34,956	2,421	361,402	36,860	80,673	5,861	138,179	9,125	294,683	106,876	27,141	685,589	150,787		
Mississippi Central	164	1,168	3,074,856	1,538,936	5,120,084	1,760,409	1,031,449	1,031,449	160,643	11,337	194,196	9,819	-18,351	-22,412	-32,047	
Missouri Pacific	302	225,549	33,611	265,276	50,967	1,758,409	1,758,409	1,758,409	1,758,409	1,758,409	1,758,409	1,758,409	1,758,409	1,758,409	1,758,409	
Missouri, Kansas & Texas	164	1,168	3,074,856	1,538,936	5,120,084	1,760,409	1,031,449	1,031,449	160,643	11,337	194,196	9,819	-18,351	-22,412	-32,047	
Montour	125	1,330,483	4,36,044	1,786,815	6,079,209	6,069,295	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Monongahela Connecting	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Monongahela Connecting	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Monongahela Connecting	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Monongahela Connecting	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,533	1,089,533	1,918,192	42,875	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	1,027,900	
Montour	164	1,178,104	1,142,044	5,658,404	1,089,											

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.			Operating revenues— Total			Maintenance of Way and structures. (inc. misc.)			Operating expenses— Equipment.			Trans- portation.			General.			Total.			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net reven- tials after rentals.	Increase (or decrease) comp. with last year.			
	Freight.	Pasenger.	Total	\$274	\$175,984	\$42,636	\$224,999	\$35,022	\$33,045	\$6,405	\$91,879	\$7,776	\$174,597	77.60	\$50,402	\$35,103	\$37,367	-\$2,386											
New Orleans Great Northern	March 274	15,491,987	24,636,578	\$42,636	\$224,999	\$224,999	\$35,022	\$33,045	\$6,405	\$91,879	\$7,776	\$174,597	77.60	\$50,402	\$35,103	\$37,367	-\$2,386												
New York Central	March 6,078	15,491,987	24,636,578	7,145,396	6,430,454	6,430,454	10,263	10,476	1,461,475	1,461,475	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479			
Cincinnati Northern	March 6,075	15,491,987	24,636,578	7,145,396	6,430,454	6,430,454	10,263	10,476	1,461,475	1,461,475	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479			
Cleve., Cin., Chic. & St. Louis	March 246	14,244	14,286,479	6,900,402	1,428,049	1,428,049	12,100	12,100	1,97,940	1,97,940	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479		
Indiana Harbor Belt	March 121	15,491,987	24,636,578	6,430,454	6,430,454	6,430,454	150,463	146,441	1,481,818	1,481,818	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479		
Kanawha & Michigan	March 176	15,491,987	24,636,578	6,430,454	6,430,454	6,430,454	56,938	56,938	181,057	181,057	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479		
Lake Erie & Western	March 738	6,33,930	66,588	1,428,049	6,900,402	1,428,049	108,217	108,217	222,938	222,938	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479		
Michigan Central	March 1,865	3,50,663	3,50,663	1,617,312	1,617,312	1,617,312	2,19,987	2,19,987	51,967	51,967	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479	2,249,479		
Pittsburgh & Lake Erie	March 224	15,491,987	24,636,578	6,430,454	6,430,454	6,430,454	287,378	287,378	7,149,808	7,149,808	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805	1,152,805		
Toledo & Ohio Central	March 503	2,729,737	84,332	1,428,049	6,900,402	1,428,049	326,908	326,908	1,98,983	1,98,983	323,040	545,333	545,333	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247	21,247
N. Y., Chicago & St. Louis	March 574	2,143,627	97,493	2,277,048	198,985	198,985	523,243	523,243	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189	1,249,189		
N. Y., New Haven & Hartford	March 1,986	11,691,363	12,088,913	12,088,913	12,088,913	12,088,913	1,543,745	1,543,745	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748	2,487,748		
Central New England	March 301	2,032,655	240,437	2,412,627	372,236	372,236	12,382	12,382	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627		
N. Y., Ontario & Western	March 569	1,736,723	140,302	1,03,173	123,862	123,862	1,243,627	1,243,627	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972	359,972		
Norfolk & Western	March 2,229	5,044,426	815,113	6,149,710	908,803	908,803	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	
Norfolk Southern	March 570	2,200	15,987,998	2,546,422	18,266,047	18,266,047	2,782,605	2,782,605	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	5,005,455	
Northern Pacific	March 307	2,729,737	84,332	1,428,049	6,900,402	1,428,049	287,378	287,378	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983	1,98,983
Northwestern Pacific	March 534	2,146,345	403,529	564,879	1,536,737	1,536,737	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	
Pennsylvania R. R.	March 738	2,729,737	84,332	1,428,049	6,900,402	1,428,049	10,309,416	10,309,416	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	
Belt., Chesapeake & Atlantic	March 738	7,358	27,408,074	42,370,129	124,564,916	13,615,883	13,615,883	1,443,053	1,443,053	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	1,230,129	
Cin., Lebanon & Northern	March 76	235,000	7,701	18,266,047	19,196	19,196	27,227	27,227	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	
Grand Rapids & Indiana	March 570	2,200	12,088,913	12,088,913	12,088,913	12,088,913	1,543,745	1,543,745	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	
Long Island	March 398	6,728,854	1,150,051	1,99,594	285,016	472,265	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	
Maryland, Delaware & Virginia	March 392	1,736,723	83,311	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	1,243,627	
P. I. V., Phila. & Norfolk	March 121	1,168,000	312,453	1,591,800</td																									

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1921—CONTINUED

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1921—CONTINUED

(a) War taxes included in March, 1921, \$1,535.15 and in period January to March inclusive, \$1,525.15. Amount surcharge collections included in revenue for month, stone, and for the period \$938.

Stolen Freight

Charles M. MacDonald, freight claim agent of the Boston & Maine, speaking before the New England Railroad Club at the April meeting, in Boston, on freight claims, their cause and prevention, declared that the tremendous amounts paid out by the railroad on account of theft must be taken as showing conclusively that that is the field where the greatest effort must be put forth looking to a remedy. On the Boston & Maine in 1920 over 2 per cent of the gross freight revenue was paid out for loss and damage to freight; and of this gross amount, over a million dollars, more than 11.43 per cent was chargeable to robbery, either of entire packages or in the breaking of packages. This, however, was not the total amount of thefts, for unlocated losses amounted to 32.10 per cent, and of these losses no doubt a considerable portion should be charged to thievery. Citing notable cases, Mr. MacDonald mentioned the theft of two automobiles from a car standing at a junction point and at another place, where a car was held because of an embargo; shoes were stolen to the amount of \$4,000.

Mr. MacDonald hopes that some inventor will arise to give us a better lock for freight cars.

The Boston & Maine has appointed a general committee the duty of which is to formulate and describe proper measures to promote the safe and correct handling of freight.

The Wise Course for Labor Leaders

P. H. Callahan, president of the Louisville (Ky.) Varnish Company, addressing the Brotherhood of Railroad Trainmen at one of their meetings recently, reminded the brakemen that public opinion and the power of the press must be fully considered. "You are in no position to fly in the face of these two powerful instrumentalities that can either be so helpful, or so damaging to your movement," he said. "Your only wise course at the present time is to accept the view of the public and the press that wages and hours must be made to conform to present conditions. It is the part of everyone to bear his own portion of the present burden, even if temporarily it means lower wages and longer hours. You participated in the profits during the time of prosperity and, if the present problem is approached in the proper spirit by your leaders, you will be able to hold the fundamentals which were established during recent years. There was never in the history of this country a time when there was so much at stake. Care and caution will have to be exercised by labor leaders if they are to have a strong appeal to public opinion. During the war, railroad workers participated in the profits and prosperity of the times more, perhaps, than any other class of workmen outside of munition workers; and, better still, were given a definite status; their necessity to industry and society is recognized as never before. There has been a great change in the minds of employers. Moreover, capital, as well as labor, has its anxieties. . . ."

Authority of I. C. C. Over Transportation of

Explosives and Dangerous Articles Increased

Under the provisions of the bill known as H. R. 12161, which was passed and approved on March 4, 1921, the authority of the Interstate Commerce Commission over the transportation of explosives was extended to include all other dangerous articles and to embrace transportation both by land and by water. The provisions of the new act apply not only to carriers engaged in interstate commerce, but also to shippers of these explosives and other dangerous articles.

The regulations heretofore promulgated by the commission were authorized by the act of March 4, 1909, which gave the commission authority to prescribe just and reasonable regulations to promote safety in the transportation of explosives. There was no specific authority for the commission to prescribe similar regulations for other dangerous articles, but these regulations were prescribed under the authority of the Mann-Elkins Act of June, 1910. The act of March 4, 1909, limited the authority in the case of explosives to transportation by land.

One of the new features of the act is the inclusion of specific authority for the commission to utilize the Bureau of Explosives in the enforcement of its regulations. No action at this

time is necessary on the part of any of the railroads. The regulations of the commission and of the Bureau of Explosives will be revised in accordance with regular practice to conform with the new law and new regulations will be prepared to apply to steamships.

Railway Business Association

President A. B. Johnson has announced the new members of the executive committee, elected or appointed at or since the March meeting, and the full list of members, as issued by Secretary Frank W. Noxon, is as follows:

President, Alba B. Johnson, Philadelphia.

Honorary Vice-president, Geo. A. Post, New York.

Vice-presidents: W. W. Salmon, Rochester, N. Y.; W. W. Willits, Chicago; Knox Taylor, High Bridge, N. J.; W. H. Woodin, New York; S. G. Allen, New York; Stephen C. Mason, Pittsburgh; Charles J. Symington, New York.

Executive Members: V. C. Armstrong, New York; J. C. Bradley, Buffalo; S. P. Bush, Columbus, O.; Robert F. Carr, Chicago; J. S. Coffin, New York; S. M. Curwen, Philadelphia; G. F. Downs, Buffalo; Andrew Fletcher, New York; Howard A. Gray, Chicago; Irving T. Hartz, Chicago; A. L. Humphrey, Pittsburgh; E. J. Kearney, Milwaukee; R. P. Lamont, Chicago; Frank J. Lanahan, Pittsburgh; E. B. Leigh, Chicago; Herbert I. Lord, Detroit; Burton W. Mudge, Chicago; A. H. Mulliken, Chicago; W. G. Pearce, New York; J. G. Platt, Boston; F. A. Poor, Chicago; William E. Sharp, Chicago; S. L. Smith, Cleveland; Alexander Turner, New York; E. H. Walker, New York; H. H. Westinghouse, New York; W. E. Clow, Chicago.

Secretary, Frank W. Noxon, Liberty building, Philadelphia, Pa.

To avoid too great a difference in the resident contingents and to promote attendance at the New York and Chicago meetings, the number of eastern members has been increased so as to make New York and Chicago equal as regards representation.

L. F. Loree Answers Lauck's Charges

At the annual meeting of the stockholders of the Delaware & Hudson, L. F. Loree, president of the company, answered charges made by W. Jett Lauck, economist for the unions affiliated with the American Federation of Labor, as follows: Mr. W. Jett Lauck, consulting economist, charged before the United States Railroad Labor Board in his attack on the honesty of railroad finances, that the Delaware & Hudson company has since 1911 issued securities in the par amount of \$34,951,000; that these securities were sold for \$33,889,609. These amounts are correct except that he understates the amount received by \$30,116. They cover four transactions for the raising of new funds to be used for Additions and Betterments, and for refunding maturing securities. But Mr. Lauck then goes on to charge that the difference is in fact water and that the public is wrongfully required to pay a return thereon. As a matter of fact, all four issues were submitted to the Public Service Commission, and, after examination, were approved by them and sold at prices approved by them. The discount, which was really \$1,031,275, was charged against the profit and loss account, as required by the Public Service Commission and by the Interstate Commerce Commission and was not added to the cost of your property devoted to public use.

"Such statements are characteristic of Mr. Lauck. He has that type of mind where, being disappointed in the results of a mathematical calculation, he calmly turns the 6's upside down, uses them as 9's and maintains the new result is the correct one, since he has, he insists, used the same figures. We came to know Mr. Lauck last spring when he testified before the Anthracite Wage Arbitration Board and where he was thoroughly discredited. Such a man, of course, cannot long continue to deceive the country, nor by his false statements do your company any lasting harm. No organization in these times would appear to be complete without a research bureau, and a 'consulting economist,' and the results are sometimes weird. Shareholders should not be disturbed by their outgivings."

Traffic News

The Senate committee on interoceanic canals on May 9 began a hearing on bills which propose to exempt American coastwise vessels from the payment of tolls for the use of the Panama Canal.

The Chicago & North Western and the Union Pacific will restore the Denver Special, the overnight train between Chicago and Denver, on May 29. This train will leave Chicago at 6:05 p. m. daily, arriving in Denver at 8:59 p. m. the next day.

The Railroad Administration has issued a circular advising the carriers that were under federal control that claims by shippers for overcharges not filed with the Interstate Commerce Commission by March 1 may be filed direct with the appropriate carrier up to September 1. The previous order that all claims be filed by March 1 aroused a storm of protest among shippers.

According to a statement sent to the press on May 10 by the "Producers and Shippers of Perishable and High Tonnage Commodities on Pacific Coast," eastern agents of the California fruit growers in New York, Pittsburgh, Baltimore and Chicago have wired the home offices they will be unable to handle the California products this year because of "the exorbitant prices caused by high freight rates" from the coast and because the competition of Eastern fruit and vegetables "makes it impossible to market the California products."

An indication that business conditions throughout the country are getting better is found in the fact that the volume of distribution by jobbers and retailers showed a distinct gain in March over February, says Archer Wall Douglas, chairman of the committee on statistics and standards of the Chamber of Commerce of the United States. The whole tone of Mr. Douglas' report is optimistic. He points out many signs as indicative of an improvement in the situation, and as tending to foreshadow a return to more settled and stable conditions. However, he says: "Excessively high railroad rates are one of the serious handicaps of the situation, while they likewise fail in their original purpose of providing adequate revenue for the roads. They are prohibitory in their effects. In some cases, especially those of early fruits and vegetables from the far south to northern and western markets, the cost of transportation is from four to five times the price received by the producer."

Coal Production

The production of soft coal continued to recover during the week ended April 30, though at a diminishing rate, according to the weekly bulletin of the Geological Survey. The total output was estimated at 6,921,000 net tons, an increase as compared with the week preceding of 101,000 tons, or 1½ per cent. In spite of the recovery, the rate of output is at the lowest level touched at any time since April, 1914, except for the period of the great strike of 1919. Moreover, as consumption and exports combined are undoubtedly in excess of 6,900,000 tons a week, the draft upon consumers' stocks of coal, which amounted to perhaps 8,000,000 tons during the first quarter of the year, still continued.

Advance figures on stocks of railroad fuel were published last week in the Geological Survey's preliminary report on consumers' stocks. Additional returns since received by courtesy of the American Railway Association confirm the preliminary results and a report for 319 railroads shows that from January 1 to April 1, these roads reduced their stocks by nearly 92,000 tons, barely 1 per cent, and the stock remaining on April 1 was sufficient for three weeks and three days' operation at the rate of consumption prevailing in the first quarter of the year. The bulletin says it, therefore, appears that while railroad fuel coal purchases have seemed to the coal operator disappointingly small, the actual acceptances by the carriers have been sufficient to meet their current requirements, in view of their present reduced rate of consumption.

Commission and Court News

Interstate Commerce Commission

The commission has suspended from June 1 until August 18, the operation of certain schedules which provide increased Class B rates from Ohio river crossings to certain South-eastern points.

The commission has further suspended until June 17 the operation of a supplement issued by the American Railway Express Company which provides increased minimum weights on kale, lettuce and spinach.

The commission has suspended from May 11 to September 8, the operation of certain schedules which provide for changes in the carload rates on pig iron from certain points in Alabama, Georgia, Tennessee and Virginia to various points in Louisiana, Oklahoma and Texas.

The commission has further suspended until June 22 the operation of certain schedules which provide for the cancellation of the existing proportional commodity rates on iron poles, pipe and pipe connections between Mississippi river crossings and points in Iowa.

The Interstate Commerce Commission has issued a decision applying its findings in the Montana intrastate rate case, in which it ordered the rates raised by the percentages applied to interstate rates to the charges of the Butte, Anaconda & Pacific, as to which a separate hearing was held.

The Interstate Commerce Commission has rendered its decision in the North Dakota intrastate fare case finding that the rates within the state maintained by state authority are unduly preferential against interstate commerce and ordering the discrimination removed by the application of the percentages of increase authorized by the commission in ex Parte 74.

The commission has suspended, from May 9 until September 6, proposed minimum shipment requirement of 6,120 quarts to apply on milk and cream in less carloads in special baggage cars (no icing), or in open iced milk or refrigerator cars from points on the Central Vermont. At present no minimum shipment requirement is published to apply on this kind of traffic either locally or jointly from points on the Central Vermont.

The commission has suspended from May 10 to September 7, the operation of certain schedules contained in tariffs of the Illinois Traction System which provide for cancellation of existing switching rate of 14 cents per net ton on brick, in carloads, from Danville to Bronson, Ill., when destined to points on and via the Chicago & Eastern Illinois, and establishment in lieu thereof of a proportional commodity rate of 56½ cents per net ton.

The commission has suspended from May 10, until September 7, the operation of certain schedules published in a supplement to St. Louis-San Francisco tariff, which provide for the cancellation of the existing through rate of 42 cents per 100 pounds on plaster from Southard, Okla., to Brooklyn and New York, N. Y. (Gulf Line Piers), applicable via Galveston, Texas, and the Morgan or Mallory Steamship Lines, leaving combination rate of 90½ cents per 100 pounds applicable instead.

The commission has further suspended until July 1, the operation of certain schedules published in a Baltimore & Ohio tariff, which provide a switching charge of 55 cents per 2,000 pounds for switching coal, coal boulets or briquettes and coke, carloads, from points of connection with the Chesapeake Western to private sidings on the Valley, also to connections with the Southern, the operation of which was suspended until June 1, by an order previously entered in the same proceeding.

The commission has suspended until September 3 the operation of all schedules published by the Southern which propose to restrict interchange with other lines at Atlanta, and providing that traffic will be interchanged with connecting lines only at certain points indicated. The proposed designated point of interchange between the Southern and the Louisville & Nashville is Decatur street, and industries more than three miles distant from this point would be assessed a switching charge of 1½ cents per 100 lb., whereas the present charge on coal, for instance, is \$2.50 per car.

State Commissions

The Railroad Commission of the State of California, on April 26, ordered the railroads in the Los Angeles, Cal., Plaza district, to construct a union passenger terminal in that city and to eliminate grade crossings at Macy, Aliso and Seventh streets. The case has been pending since 1917. The order requires the Southern Pacific, the Atchison, Topeka & Santa Fe, the Los Angeles & Salt Lake and the Pacific Electric systems to join in the station construction and also indicates what grade separation is to be made by each, excepting the Pacific Electric which will be treated in a subsequent order. The order also directs that the new terminal is to be built in a district bounded by Commercial, North Main and Redondo streets, Alhambra avenue and the Los Angeles river. The cost of construction is to be borne by the four roads, and no attempt is made at this time by the commission to divide this cost.

Personnel of Commissions

E. J. Lewis, who, with J. B. Campbell, on April 27 was appointed by President Harding to the Interstate Commerce Commission and was confirmed by the Senate on May 3, arrived in Washington the first of this week and immediately entered upon his new duties. He comes to the commission from the chairmanship of the Public Service Commission of Indiana. While the bulk of his work there was in the field of public utilities, including electric interurbans, he had attracted attention by carrying through the long-fought-out Indiana-Illinois freight rate controversy. His record was such that he had the support of Senators New and Watson, Postmaster-General Hays, Governor Warren T. McCray, former Governor James P. Goodrich and other leaders in the state. Mr. Lewis is 48 years old. His education, as far as schools were concerned, was limited to two six-months' terms in a one-room country school. At 11 years of age he became a printer's apprentice. He advanced to a journeyman printer and foreman of a daily newspaper, and was a member of the Typographical Union. At 22 he became a newspaper reporter and worked through the various steps of that profession up to that of correspondent. His particular bent seemed to be that of investigation and constructive suggestion. He was sent to New Zealand, Australia, South Africa, Japan, China, Manchuria, Siberia, Korea, Russia, India, and to Europe on several occasions on investigations. In this connection his attention was particularly centered on governmental machinery and policies and, necessarily, on the important part that railroads play in economic and political affairs of government.

Four years ago, when he was selected by Governor James P. Goodrich of Indiana primarily for the purpose of extricating both the Indiana commission and the public utilities and common carriers from politics, he found a docket with 634 open or undecided cases—practically a year's work. This was soon reduced to a point where the commission was abreast with current affairs, and when last week he turned the executive office of the commission over to John W. McCordle, his successor as chairman, there were but 58 live unheard cases pending, or less than the normal current monthly finding. Mr. Lewis, when on the Indiana commission, is understood to have held that the creation of commissions was the result, very largely, of delays occasioned by handling matters through formal tribunals, and that the whole salvation of at least utility regulation lies in dealing with the present and the future rather than with the past.

Foreign Railway News

Italian Assistance for Roumanian Railways

LONDON.

It is reported that a representative of the Italian Railway Administration recently arrived at Bucharest for the purpose of studying the question of reorganizing the Roumanian railways and the participation of Italian capital and the employment of Italian workmen in such enterprise. A conference between the representative and the Roumanian Ministry of Communications has taken place regarding the possibility of an agreement being made in this connection.

Disabled Italian Soldiers Occupy Railway Premises

LONDON.

The soldiers disabled in the war have occupied the premises of the Italian Railway Administration requesting that they should be put in the places of women engaged during the war as stenographers, and so forth. They were removed from the premises by the police, but about 5,000 with but one leg or one eye, attacked the police patrol on duty at the gate of the premises and occupied the offices again. The general manager of the Railway Administration has agreed to replace 5,000 girls engaged during the war with 5,000 disabled soldiers.

European Bids on Track Materials for Chile

Bids on steel rails, rail joints, spikes, bolts, switches and crossings of a total value of about \$1,800,000 which were received and opened at Santiago, Chile, on March 17, by the state railways included bids from German, French and Belgian manufacturers, in addition to American, according to advices from Commercial Attaché McQueen. The bids received from the Germans were considerably lower than the others but their failure to comply strictly with the specifications, including terms of payment, may prevent their receiving the award, and it is considered probable that all bids may be rejected pending possible reduction in prices.

Financial Position of the English Railways

The railways of Great Britain are still under government control and are operating under guarantees. Consequently, it is not difficult to understand that the annual reports for 1920, most of which have been made public, show little change in net earnings over 1919. The annual report of one of the companies, the London & North Western, shows this relative uniformity. Some of the principal figures of this report follow:

	1920	1919
Receipts in respect of railway working under Government control.....	\$195,905,871	\$152,484,877
Expenditures	165,630,982	122,868,158
Net receipts	30,274,889	29,616,719
Other net receipts—miscellaneous, rents, etc.	3,080,744	3,468,644
Total net income	33,355,633	33,085,363
Brought forward from previous year.....	1,316,039	1,284,712
Total	\$34,671,672	\$34,370,075
Less—Interest, rentals and other fixed charges	8,194,388	7,957,633
Balance after payment of fixed charges.....	\$26,477,284	\$26,412,442

Note: Pounds to dollars at par.

The report does not separate operating income from returns received under government contracts and consequently no measure of its actual earning power is given. The company was enabled to pay 7½ per cent on its ordinary stock in 1920, in spite of this comparatively high dividend rate, the company's stock has been selling in the market at around 70. This low figure may be taken as the market's discount on what it thinks the position of the company will be when government control ceases next fall. During the period of government control the expenses of the carriers have increased tremendously. The chairman of the company, in addressing the annual stockholders' meeting said, in part:

"Our wages bill in 1913 was \$29,160,000 and in 1920 it had reached the enormous figure of \$97,200,000. The various grades (of employees) have been standardized; that is to say, all men doing the same kind of work receive practically the same rates of pay, whether they are employed at the busiest center or at the smallest and most remote stations."

Relative to the government's proposal to group all the railways into a few large systems, the chairman said, in part:

"There can be no question that, with the present high wages and reduced hours, no possible economies can be effected by any system of grouping the railways or by any other means that we can see will without a further considerable increase in rates and fares, restore the pre-war net revenue earning capacity of the railways, and it must be remembered that increases of rates and fares cannot be carried too far without defeating their object by destroying the traffic."

March Car Exports

Ten passenger cars, valued at \$237,730, were exported in March, twice as many as in February. The February totals showed a sharp decline over January in freight car exports and the March totals evidence an even sharper slump in this business. The March shipments totaled 707, valued at \$1,131,447. The exports of car parts in March were valued at \$1,327,959, or a little more than half the February exports. The detailed figures by countries, as compiled by the Bureau of Foreign and Domestic Commerce, follow:

Countries	Passenger Number	Freight and other Number	Parts of cars Dollars
France .....	..	..	13,011
Malta, Gozo & Cyprus Is. ....	..	..	175
Norway	10	237,740	..
Russia in Europe .....	..	..	..
England .....	..	..	20,280
Canada	19	28,310	39,632
Costa Rica .....	..	..	1,436
Guatemala .....	..	..	5,143
Honduras .....	..	..	98,296
Panama .....	..	..	2,902
Salvador .....	..	..	32,790
Mexico	45	129,012	31,719
Newfoundland and Labrador .....	..	..	1,626
Jamaica .....	..	..	4,013
Trinidad and Tobago .....	..	..	2,199
Cuba	306	565,850	173,091
Dominican Republic	56	55,620	41,132
Argentina .....	..	..	332,947
Brazil	39	214,958	63,086
Chile .....	..	..	56,443
Colombia	12	19,979	384
Ecuador .....	..	..	2,007
British Guiana .....	..	..	..
Peru	3	9,324	52,848
Uruguay .....	..	..	28,098
Venezuela	10	5,683	..
China .....	..	..	89,826
British India .....	..	..	19,141
Hongkong .....	..	..	3,900
Japan .....	..	..	102,300
Australia .....	..	..	32,800
Philippine Islands	200	42,750	52,055
British West Africa .....	..	..	..
British South Africa .....	..	..	23,477
Portuguese Africa	17	59,961	..
Egypt .....	..	..	1,202
Total	10	237,740	707
			1,131,447
			1,327,959

Foreign Capital Influences Chinese Railway Purchases

The invitation by Chinese bankers on behalf of the Ministry of Communications for bids on rolling stock to be supplied to the government railways (*Railway Age*, April 22, page 1005) is said by Trade Commissioner Frank Rhea, Peking, to constitute for all practical purposes an invitation for bids by the Ministry itself. Inasmuch, therefore, as certain of the government railways have been financed to a considerable extent by foreign concerns under contracts restricting the powers of the Ministry in many ways, some of these foreign interests are maintaining that on certain railways the equipment to be purchased must, under terms of their agreements, be purchased from manufacturers of their own respective countries. For instance, a British company, which has assisted in financing the Tientsin-Pukow, the Shanghai-Nanking and the Shanghai-Hangchow-Ningpo lines, is claiming that its contract provides that it shall have the option for the purchase of equipment and supplies for these lines and, furthermore, that under the agreement British concerns must be given preference in placing orders for materials.

Train Reductions in England

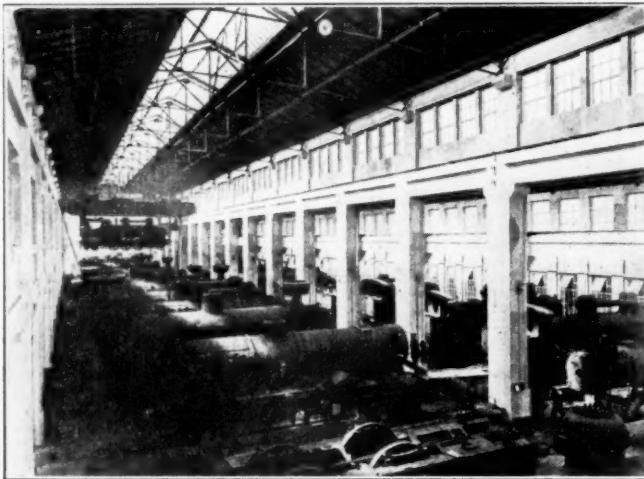
LONDON.

On account of the continuation of the coal strike and the severe shortage of coal, the English railways have put into effect a reduced schedule which amounts to about 50 per cent reduction in train mileage. The greatest reduction is made in the long distance runs where the train mileage is the greatest. In addition the number of cars per train has been decreased. Some sleeping cars and luncheon cars have been removed from service and a very determined effort is being made to reduce fuel consumption.

At the present time negotiations between the miners and the mine owners are not in progress. The miners persist in their demands for the national wage board and the national pool for wages, the latter being a demand which neither the mine owners nor the government will consider. Industry throughout Great Britain has been seriously penalized through the lack of coal and unemployment is constantly increasing. The railway union which threatened to refuse to handle the coal has agreed to handle coal only for delivery to public utilities and for household consumption.

Stagnation of Transportation in Austria

Although the railway situation in Austria is very serious and many years may be required to restore conditions to normal, every effort is being put to improve conditions, according to Colonel W. B. Causey, American Technical Adviser to Austria, and measurable progress is being made. One of the greatest needs of Austria and of all central Europe at the present, says Colonel Causey, is locomotives. The Austrian locomotive shops are filled with bad order engines and they have orders from neighboring states far in advance of their capacity. These shops are laboring under a great handicap in the lack of raw material and coal and to add to their labor difficulties their employees are greatly undernourished. The accompanying photograph



An Austrian Munitions Factory Converted to a Locomotive Shop

shows the progress being made by one concern. During the war this plant manufactured munitions but after the armistice it was converted to a locomotive shop. The capacity of this plant is 50 locomotives but it is being extended to take care of 80 locomotives at one time. At present every available stall in the shop is filled and 2,000 men are employed.

Austrian iron mines, blast furnaces and rolling mills have been idle for practically two years because of the inability to secure coke and coal. All the coke producing territory as well as the other coal mines are either in Czechoslovakia, one of the new states carved out of the old empire, or in Upper Silesia (Germany). Present Austria produces only lignite and that of a poor calorific value, and only about 15 per cent of the fuel needs of the country.

The settlement of the Austrian question is in the hands of the Reparations Commission in Paris which has been working for many months over the allocation of coal and coke; credits to pay for food, coal and other raw materials; and the rehabilitation of the financial system—so far without visible results.

RAILWAY AGE

Equipment and Supplies

Locomotives

THE SANTO RAILWAY, Shantung province, China, has ordered 6 Consolidation type locomotives, from the Baldwin Locomotive Works.

THE INTERNATIONAL & GREAT NORTHERN reported in the *Railway Age* of January 7, as inquiring for four Mikado and four switching locomotives, has ordered eight locomotives from the Baldwin Locomotive Works.

THE SHANTUNG RAILWAY has ordered 3 Pacific type locomotives from the American Locomotive Company. These locomotives will have 20 by 26 in. cylinders and a total weight in working order of 175,000 lbs. They will be equipped with super-heaters.

Freight Cars

THE CHICAGO GREAT WESTERN is inquiring for prices on the repair of 400 box cars.

THE TIENTSIN-PUKOW (China) is asking for prices through New York export houses, on 100 all-steel box cars of 40-tons capacity.

THE WOO HANG (China) is asking for prices through New York export houses, on 40 composite gondola cars, of 40-tons capacity.

THE PEKIN KALGAN (China) is asking for prices through New York export houses on 450 gondola cars and 500 box cars of 40-tons capacity, 30 box cars of 30-tons capacity and 20 cattle cars.

THE PEKING-SUIYUAN (China) is asking for prices through New York export houses, on 450 all steel box cars and 100 all steel gondola cars, of 40-tons capacity.

Iron and Steel

THE DOMINION GOVERNMENT has ordered from the Algoma Steel Corporation, 50,000 tons of rails for the Canadian National Railways.

THE ST. LOUIS SOUTHWESTERN has ordered 270 tons of steel from the Virginia Bridge & Iron Company, for a bridge over the Trinity river in Texas.

THE BALTIMORE & OHIO has ordered from the Bethlehem Steel Bridge Corporation, 850 tons of fabricated steel, for a bridge at Foxburg, Pa.

THE MAINE CENTRAL reported in the *Railway Age* of April 1, as inquiring for 400 tons of fabricated steel, for a bridge at Norridgewock, Maine, has ordered this steel from the Bethlehem Steel Bridge Corporation.

Machinery and Tools

THE NEW YORK CENTRAL is inquiring for one 48-in., 500-ton, double-end wheel press.

Miscellaneous

THE MISSOURI PACIFIC is inquiring for 500,000 high carbon steel tie plates.

THE AMERICAN ASSOCIATION of Dining Car Superintendents will hold a special meeting at Chicago in connection with the National Hotel and Restaurant Week, commencing July 12.

Supply Trade News

R. S. Cowan has succeeded **A. W. Hillis** as railroad representative of the **Western Electric Company** at Detroit, Mich.

The **Nathan Manufacturing Company** has removed its general offices from 512 Fifth avenue to 21 East Fortieth street, New York City.

Raymond R. Bilter, formerly secretary of the Trumbull Waste Manufacturing Company, Philadelphia, Pa., is now associated with the **Railway Supply & Manufacturing Company**, Cincinnati, Ohio.

Arthur G. Johnson, for fourteen years with the Vapor Car Heating Company, Inc., Chicago, and recently with the International Steel Corporation, New York, is now representing the **Armspear Manufacturing Company**, 447 West Fifty-third street, New York City.

The report that the **Ryan Car Company** was to move its Chicago offices from the McCormick building, 332 South Michigan avenue, published in this column in the issue of May 6, was incorrect. The company's offices are as formerly in the McCormick building.

D. B. Steinman, formerly special assistant to Gustav Lindenthal, consulting engineer and later professor in charge of civil and mechanical engineering, at the College of the City of New York, has opened an office as consulting engineer at 25 Church street, New York.

Richard Gregory, controller of the **Western Electric Company**, New York, has been made also a member of its board of directors and **S. Wallace Murkland**, assistant controller since 1918, has been appointed general contract sales manager; both with headquarters at New York.

Frederick Hayes Wilkins, European general manager of the **International Western Electric Company**, New York, has been elected a vice-president with headquarters at London, England. This company is the exporting subsidiary of the Western Electric Company, New York.

Sidney G. Johnson, who recently opened an office at 30 Church street, New York City, has been appointed sales representative of the **Signal Accessories Corporation**, Utica, N. Y. He also represents the Hazard Manufacturing Company, Wilkes-Barre, Pa., as noted in the *Railway Age* of April 29.

The **Electric Service Supplies Company**, Philadelphia, Pa., will act as exclusive selling agent for the **Peerless Equipment Company**, Hanover, Pa., manufacturers of Peerless armature repair machinery, and Segur coil winding tools. Heretofore Peerless armature tools were manufactured by the Manley Manufacturing Company, York, Pa., and Segur coil winding tools by the Electrical Manufacturers Equipment Company, Chicago.

E. C. Sattley, associated for 20 years with the Page Steel & Wire Company at Pittsburgh and Monessen, serving a large part of the time as general manager, has joined **R. J. Jones**, formerly manager, and **Oliver G. Boyd**, formerly secretary, of the Tube & Pipe Supply Company, in forming a new corporation under the name of the **Iron & Steel Products Company**, with offices at 230 Fifth avenue, Pittsburgh, Pa. The new organization will continue the business heretofore conducted by the Tube & Pipe Supply Company. E. C. Sattley is president, R. J. Jones, vice-president, and Oliver G. Boyd, secretary and treasurer of the new company.

Wilber Eckels has been appointed western sales manager, with headquarters in the People's Gas building, Chicago, for the **Standard Coupler Company**, New York. Mr. Eckels graduated from Pennsylvania State College with the degree of mechanical engineer and has been with the Standard Coupler

Company since 1912, with the exception of one year when he served as lieutenant in the 35th Engineers, A. E. F., in France and England. **E. G. Goodwin** has been appointed chief engineer of the same company with headquarters at New York, vice R. D. Gallagher, Jr., resigned. Mr. Goodwin received his technical education in the Virginia Polytechnic Institute and has been connected with the Norfolk & Western in its engineering department for eleven years.

Homer J. Forsythe, manager of the construction division of the engineering department of E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del., has been transferred to the position of assistant general manager of the **Hyatt Roller Bearing Company**, Newark, N. J., a subsidiary of the General Motors Corporation. Mr. Forsythe has a wide experience in machine shop work, having been with the engineering department of the Du Pont Company since August, 1906, when he began work at the Wilmington office as estimator. Later he held executive positions at the Brandywine shops, Wilmington, and during the war he was made manager of the combined Wilmington shops which were engaged in the construction of material for the war plants. Since the war, Mr. Forsythe served as manager of the construction division of the engineering department.

South African Railway Electrification

LONDON.

The Office of the High Commissioner for the Union of South Africa, Trafalgar Square, London, W. C. 2, England, has announced that the time limit for which all tenders regarding the electrification of the Capetown-Simonstown and Durban-Maritzburg Lines, has been extended to noon, July 5, 1921.

Obituary

Charles Hosmer Morse, chairman of the board of directors of **Fairbanks, Morse & Company**, Chicago, died on May 5, at his home in Winter Park, Fla. He was born in St. Johnsbury, Vt., on September 23, 1833, and received his education at St. Johnsbury Academy. Mr. Morse began his business career in 1850, as a clerk in the office of E. & T. Fairbanks & Co., scale manufacturers. In 1862, he became a member of the firm of Fairbanks, Greenleaf & Co., Chicago, successors to E. & T. Fairbanks & Co., and on January 1, 1872, when the firm of Fairbanks, Morse & Co. was established, he became president of that company. He retired as president on May 19, 1915, to become chairman of the board of directors of the same company, at which time he was succeeded as president by his son, C. H. Morse, Jr.



C. H. Morse

Trade Publications

ADVANTAGES OF SUPERHEATED STEAM.—What Every Executive Should Know About Superheated Steam is the subject of Bulletin No. T-7 recently issued by the Superheater Company, New York. The bulletin discusses superheaters for stationary power plants and is designed to appeal to the executives and, therefore, has been made non-technical. After a brief explanation of superheated steam and the methods of producing it, the economies effected by its use are discussed, the concluding section dealing with the application of superheat to existing power plants.

Railway Construction

CHESAPEAKE & OHIO.—This company has entered into an agreement with the county authorities of Logan county, W. Va., for the construction of a bridge across the Guyandot river. The county authorities of Logan county are to construct the substructure and the company is to build the superstructure and the approaches.

CHICAGO & NORTH WESTERN.—This company has awarded a contract to Witherspoon and Englar, Chicago, for rebuilding the company's grain elevator on the Calumet river, Chicago, which was destroyed recently by an explosion.

CHICAGO UNION STATION.—This company is accepting bids for the construction of a viaduct on Van Buren street, between Canal street and the Chicago river, Chicago.

ILLINOIS CENTRAL.—This company will shortly accept bids for the construction of a new turntable at Dubuque, Iowa, and the extension of roundhouse facilities at Dubuque and at Paducah, Ky.

ILLINOIS CENTRAL.—This company is accepting bids for the construction of the substructure for its bridge over the tracks of the Chicago, Milwaukee & St. Paul at Genoa, Illinois, to cost approximately \$30,000.

LOUISVILLE & NASHVILLE.—This company has awarded contracts to the Roberts & Schaefer Company, Chicago, for the installation of two electrically operated cinder plant equipments at Hazard and Loyall, Ky.

NEW YORK, NEW HAVEN & HARTFORD.—This company has awarded a contract to D. O'Connell's Sons, Holyoke, Mass., for regrading a portion of its freight yards and removing and relaying several tracks and cranes at Springfield, Mass., and other work incidental with the construction of the Springfield-West Springfield bridge, now being built under the jurisdiction of Hampden county, Mass.

SOUTHERN PACIFIC, TEXAS LINES.—This company has awarded contracts to the W. C. Hedrick Company, Dallas, Tex., for the construction of a three-story storehouse with dimensions of 60 ft. by 208 ft., of reinforced concrete, hollow tile and brick construction, to cost approximately \$100,000, and a coach paint shop of steel construction with dimensions of 173 ft. by 274 ft., to cost approximately \$120,000.

TEXAS & PACIFIC.—This company has acquired real estate west of the city of Fort Worth, Tex., which will be the site of future yard and terminal improvements.

TEXAS & PACIFIC.—This company contemplates undertaking the construction of a new passenger station at Cottonport, Louisiana.

TEXAS & PACIFIC.—This company, which was noted in the *Railway Age* of April 15 (page 958), as accepting bids for the construction of a bridge over Bayou-Plaquemine, La., has awarded a contract for the structural steel and machinery for this work, to the Phoenix Bridge Company.

UNION PACIFIC.—This company is accepting bids for the work of lining its Sherman tunnel, near Hermosa, Wyo., with concrete.

UNION PACIFIC.—This company has awarded a contract to the Utah Construction Company, Ogden, Utah, for the grading and the construction of bridges along a forty-two mile line from Haig, Neb., west into Wyoming.

VALDE & NORTHERN.—The Interstate Commerce Commission after having denied the application of this company for a certificate authorizing construction work by this company has held a re-hearing and issued a report finding that construction work was begun in good faith prior to the effective date of the law requiring certificates by the commission and that, therefore, no certificate of public convenience and necessity is, under the circumstances, required.

Railway Financial News

CANADIAN PACIFIC.—*Annual Meeting.*—Stockholders at the annual meeting in Montreal, May 4, passed a resolution approving the issuance of bonds, debentures or other securities collateral to consolidated debenture stock which the company is or may hereafter be empowered to issue. Retiring directors were re-elected. President E. W. Beatty, in a statement to the meeting referred to recent financing of the company as follows:

Your directors have recently accepted a proposal for the acquisition by London, England, interests of a substantial amount of four per cent consolidated debenture stock which was very favorable. This is the first application for the acquisition of debenture stock from England since the outbreak of hostilities in 1914, and, in the opinion of your directors, is an incident of the utmost significance as indicating the resumption of interest in your principal capital security in Great Britain. It may conceivably be the first step towards the re-establishment of a market in England for the banking securities of the company which cannot but have an important influence on its future financing.

CHICAGO, BURLINGTON & QUINCY.—*New Directors.*—Arthur C. James, of New York, and Charles Donnelly, president of the Northern Pacific, have been elected directors to succeed J. E. Reynolds and C. W. Bunn, respectively.

CHICAGO, ROCK ISLAND & PACIFIC.—*Asks Authority for Equipment Warrants.*—This company has applied to the Interstate Commerce Commission for authority to issue six lease warrants for \$158,885.54 each, with interest at 7 per cent, payable to the Pullman Company as part payment under the lease plan for 30 steel coaches and five steel chair cars costing \$1,128,840.

LEHIGH & NEW ENGLAND.—*Annual Report.*—The income statement for the year ended December 31, 1920, as compared with the year 1919 is as follows:

	1920	1919
Compensation, January and February.....	\$187,484	.....
Compensation for guaranty period.....	567,463	.....
Compensation for year.....	.....	\$1,135,761
Operating results September 1 to December 31, 1920:		
Total railway operating revenues.....	\$1,897,103	.....
Total railway operating expenses.....	1,401,595	.....
Net from railway operations.....	\$495,508	.....
Railway tax accruals.....	102,937	.....
Railway operating income.....	\$392,571	.....
Net hire of equipment—credit balance.....	108,888	.....
Net joint facility rents—debit balance.....	18,255	.....
Net railway operating income.....	\$483,204	.....
Gross income	\$1,255,424	\$1,163,334
Total deductions from gross income.....	408,673	498,813
Net income	\$846,750	\$664,521
Balance transferred to profit and loss.....	843,698	661,511

The operating revenues and expenses in detail and the principal traffic statistics for 1920 compare with 1919 as follows:

	Operating Revenues	1920	1919
Anthracite coal freight.....	\$2,659,033	\$2,078,961	
Bituminous coal freight	479,701	432,909	
Merchandise freight	1,478,193	1,249,934	
Passenger	23,572	20,649	
Total operating revenues (inc. other)....	\$4,820,406	\$3,981,318	
	Operating Expenses	1920	1919
Maintenance of way and structures.....	\$789,497	\$573,850	
Maintenance of equipment.....	1,048,207	863,067	
Traffic	70,381	31,772	
Transportation	1,836,042	1,372,666	
General	179,466	116,353	
Total operating expenses.....	\$3,921,144	\$2,956,117	
Net revenue from railway operations.....	\$899,262	\$1,025,201	
Tax accruals	\$227,775	\$179,671	
Total railway operating income.....	\$671,487	\$845,531	
Net railway operating income.....	\$903,699	\$833,975	
Total revenue tonnage.....	6,881,496	6,749,758	
Average ton-miles—revenue freight per train mile	560.12	581.25	
Average revenue per ton-mile of freight (cents)	1.80	1.49	

LITTLE ROCK & ARGENTA.—*Purchase by Missouri Pacific.*—See Missouri Pacific.

LEHIGH VALLEY.—*Annual Report.*—A review of this company's annual report for 1920 appears on another page of this issue.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Authorized to Acquire Road.*—This company has been authorized by the Interstate Commerce Commission to acquire the property of the Wisconsin & Northern by purchase and to issue its 5 per cent consolidated gold bonds to the amount of \$2,671,000 in part payment.

MISSOURI PACIFIC.—*Annual Report.*—The corporate income statement for the year ended December 31, 1920, compares with the previous year as follows:

	1920	1919	Increase or Decrease
Railway operating revenues.....	\$98,194,271	\$98,194,271	
Railway operating expenses.....	94,909,599	94,909,599	
Net revenue railway operations	\$3,284,672	\$3,284,672	
Railway taxes and uncollectible railway revenue	\$3,820,709	\$235,000	\$3,585,709
Total operating income.....	Def. \$536,036	Def. \$235,000	-\$301,036
Non-operating income.....	1,935,132	1,549,050	386,081
Compensation accrued under federal control (on basis of standard return)	1,872,101	14,206,814	-12,334,713
Government guaranty under Transportation Act of 1920.	15,638,829	.....	15,638,829
Gross income	\$18,910,026	\$15,520,864	\$3,389,161
Deductions from gross income..	15,876,950	11,280,025	4,596,925
Balance, net income transferred to profit and loss.....	\$3,033,075	\$4,240,839	-\$1,207,764

The annual report of the Missouri Pacific will be reviewed editorially in an early issue.

NEW YORK, CHICAGO & ST. LOUIS.—The corporate income account for the year ended December 31, 1920, is as follows:

	1920	*1919
Railway operating revenues.....	\$23,953,824	\$23,478,763
Railway operating expenses.....	19,112,850	18,397,611
Net revenue from railway operations.....	\$4,840,974	\$5,081,152
Railway tax accruals.....	\$1,020,000	\$626,294
Railway operating income.....	\$3,816,117	\$4,453,272
Total non-operating income.....	\$691,357	\$260,484
Gross income	\$4,507,474	\$4,713,756
Total deductions from gross income.....	\$2,258,623	\$2,345,241
Net income	\$2,248,851	.....

*Includes both corporate and federal items.

The annual report of the New York, Chicago & St. Louis will be reviewed editorially in an early issue.

NEW YORK, CHICAGO & ST. LOUIS.—*Authorized to Pledge Bonds.*—This company has been authorized by the Interstate Commerce Commission to pledge and repledge from time to time all or part of \$1,036,000 of second and improvement mortgage bonds now held in its treasury as collateral security for short term notes.

NORFOLK SOUTHERN.—*Annual report.*—The income statement for the year ended December 31, 1920, compares with 1919 as follows:

	1920	1919
Operating revenues	\$6,610,402	.....
Operating expenses	6,959,365	\$61,177
Net railway operating income	Def. \$348,963	Def. \$61,177
Railway tax accruals	219,416	30,139
Railway operating income	Def. \$569,079	Def. \$91,388
Rents from lease of road (including standard return)	\$211,145	\$1,366,751
Miscellaneous income (including rental and operating deficit paid by government on account of operations during guaranty period)....	1,312,515	42,551
Total non-operating income (including other)	\$1,684,258	\$1,714,499
Gross income	\$1,115,178	\$1,623,111
Total deductions from gross income	\$1,168,739	\$1,310,125
Net income	Def. \$53,561	\$312,986

The annual report of the Norfolk Southern will be reviewed editorially in an early issue.

PERE MARQUETTE.—*Annual Report.*—The corporate income account for the year ended December 31, 1920, is as follows:

	1920	1919
Operating revenues	\$35,022,787	.....
Operating expenses	30,350,542	.....

Net operating revenue.....	\$4,672,245	.....
Non-operating income	1,761,126	.....

Gross income (includes standard return, full year, 1919, two months, 1920).....	\$6,433,365	\$3,744,772
Taxes	768,407	91,417
Hire of equipment—Debit	1,297,174	.....
Rentals	730,410	26,049

Total charges excluding interest.....	\$2,801,100	\$121,294
Balance before deduction of interest.....	3,632,265	3,623,478

Total interest accruals	\$2,238,292	\$1,726,547
Surplus	\$1,393,973	\$1,896,931

The annual report of the Pere Marquette will be reviewed editorially in an early issue.

PITTSBURGH & WEST VIRGINIA.—*Annual report.*—The income account for the year ended December 31, 1920, is as follows:

	1920	1919
Railway operating revenues.....	\$2,254,048	.....
Railway operating expenses.....	2,273,966	.....
Net revenue from railway operations.....	Dr. \$19,918	.....
Railway tax accruals.....	169,322	.....
Total operating income	Dr. \$190,367	.....
Gross income	\$470,755	.....
Total deductions from gross income.....	\$37,076	\$67,581
Net income	\$433,679	\$522,355

Note—Due to uncertainty as to the amount finally to be allowed, no estimate has been set up in the year's income figures to represent the return or rental due from the United States Railroad Administration for federal operation during January and February, 1920, or from the Interstate Commerce Commission for the six months' guaranty period ended September 1, 1920.

SPRINGFIELD TERMINAL.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to increase its capital stock from \$75,000 to \$150,000.

WABASH.—*Annual Report.*—A review of this company's annual report for 1920 appears on another page of this issue.

WEST SIDE BELT.—*Annual report.*—The income account for the year ended December 31, 1920, is as follows:

	1920	1919
Railway operating revenues.....	\$771,913	.....
Railway operating expenses.....	690,901	.....
Net revenue from railway operations.....	\$81,012	.....
Railway tax accruals.....	9,502	.....
Total operating income	\$71,345	.....
Gross income	\$445,467	.....
Total deductions from gross income.....	\$128,132	\$152,136
Net income	\$317,335	Dr. \$137,807

Note—Due to uncertainty as to the amount finally to be allowed, no estimate has been set up in the year's income figures to represent the return or rental due from the United States Railroad Administration for federal operation during January and February, 1920, or from the Interstate Commerce Commission for the six months' guaranty period ended September 1, 1920.

WISCONSIN & NORTHERN.—*Purchase by M. St. P. & S. S. M.*—See Minneapolis, St. Paul & Sault Ste. Marie above.

Guaranty Certificates Issued

The Interstate Commerce Commission has issued certificates for partial payments to the railroads on account of their six months' guaranty, as follows:

American Railway Express Company	\$1,500,000
Buffalo, Rochester & Pittsburgh	97,500
Carolina & Northwestern	59,500
Chicago, Burlington & Quincy	650,000
Chicago, Terre Haute & Southeastern	23,000
Cleveland, Cincinnati, Chicago & St. Louis	470,000
Deering Southwestern	4,000
Kansas, Oklahoma & Gulf	90,000
Louisville, Henderson & St. Louis	175,000
Marion & Rye Valley	8,800
Meridian & Memphis	9,000
Mississippi Central	245,000
Montpelier & Wells River	64,500
New Orleans Great Northern	105,500
Paris & Mt. Pleasant	20,000
Savannah & Statesboro	1,500
St. Paul Bridge & Terminal	7,000
Texas & Pacific	125,000
Vermont Valley	45,000
Virginia Southern	2,000

Dividends Declared

BESSEMER & LAKE ERIE.—Preferred, 3 per cent, semi-annually, payable June 1 to holders of record May 15.

CANADIAN PACIFIC.—Common, 2½ per cent, quarterly, payable June 30 to holders of record June 1.

PITTSBURGH, BESSEMER & LAKE ERIE.—Three per cent, semi-annually, payable June 1 to holders of record May 14.

ANNUAL REPORT

The Delaware and Hudson Company—Ninety-First Annual Report

NEW YORK, N. Y., April 1, 1921.

To the Stockholders of The Delaware and Hudson Company:

The following presents the income account of your company for the year 1920, arranged in accordance with the rules promulgated by the Interstate Commerce Commission, with comparative results for the year 1919:

	1920	1919	Increase or Decrease
Railway operating revenues..	\$45,354,298.72	\$34,749,709.00	\$10,604,589.72
Railway operating expenses..	42,126,330.19	31,886,711.03	10,239,619.16
Net railway operating revenues ..	<u>\$3,227,968.53</u>	<u>\$2,862,997.97</u>	<u>364,970.56</u>
Operating income credits:			
Rent from locomotives....	\$100,727.06	\$108,424.04	—7,696.98
Rent from passenger train cars ..	79,106.12	16,364.66	62,741.46
Rent from work equipment..	21,489.56	10,759.33	10,730.23
Joint facility rent income..	136,502.10	132,130.79	4,371.31
Total credits.....	<u>\$337,824.84</u>	<u>\$267,678.82</u>	<u>70,146.02</u>
Gross railway operating income ..	<u>\$3,565,793.37</u>	<u>\$3,130,676.79</u>	<u>435,116.58</u>
Operating income debits:			
Railway tax accruals....	\$1,186,053.92	\$1,075,802.70	110,251.22
Uncollectible railway revenues ..	939.26	8,662.03	—7,722.77
Hire of freight cars—debit balance ..	79,555.60	Cr. 18,160.12	97,715.72
Rent for locomotives....	18,447.13	6,595.15	11,851.98
Rent for passenger train cars ..	32,593.63	15,513.01	17,080.62
Rent for work equipment..	1,578.44	994.97	583.47
Joint facility rents.....	428,058.56	376,914.87	51,143.69
Total debits.....	<u>\$1,747,226.54</u>	<u>\$1,466,322.61</u>	<u>280,903.93</u>
U. S. Govt. compensation guarantee ..	<u>\$5,621,163.60</u>	<u>\$5,445,404.46</u>	<u>175,859.14</u>
Net railway operating income ..	<u>\$7,439,730.43</u>	<u>\$7,109,758.64</u>	<u>329,971.79</u>
Non-operating income:			
Income from lease of road.	\$88,933.13	\$86,763.87	2,169.26
Miscellaneous rent income.	85,197.78	58,799.68	26,398.10
Miscellaneous non-operating physical property.....	23,467.84	96,398.09	—72,930.25
Dividend income.....	1,038,041.03	934,267.98	103,773.05
Income from funded securities ..	214,969.20	234,251.46	—19,282.26
Income from unfunded securities and accounts....	143,876.71	429,066.64	—285,189.93
Income from sinking and other reserve funds....	81,374.32	107,245.01	—25,870.69
Miscellaneous income.....	1,315,427.01	1,474,068.27	—158,641.26
Total non-operating income ..	<u>\$2,991,287.02</u>	<u>\$3,420,861.00</u>	<u>—429,573.98</u>
Gross income.....	<u>\$10,431,017.45</u>	<u>\$10,530,619.64</u>	<u>—99,602.19</u>
Deductions from gross income:			
Rent for leased roads....	\$1,944,157.01	\$1,964,123.97	—19,966.96
Miscellaneous rents....	1,821.25	3,268.00	—1,446.75
Interest on funded debt..	3,228,948.12	2,919,237.04	309,711.08
Interest on unfunded debt	303,585.05	412,966.70	—109,321.65
Miscellaneous income charges ..	19,343.15	626,079.45	—606,736.30
Total deductions.....	<u>\$5,497,854.58</u>	<u>\$5,925,615.16</u>	<u>—427,760.58</u>
Net income—The Delaware and Hudson Company carried to general profit and loss ..	<u>\$4,933,162.87</u>	<u>\$4,605,004.48</u>	<u>328,158.39</u>
Percentage to capital stock ..	11.61	10.83	.78

FINANCIAL.

The capital stock of The Delaware and Hudson Company, on December 31, 1920, was \$42,503,000, there having been no change during the year. The total funded debt on December 31, 1920, was \$68,096,000, a net increase of \$2,953,000. The three-years, five per cent, secured notes aggregating \$9,000,000, issued during 1917, as stated in the annual report for that year, matured on August 1, 1920, and were paid on that date. In order to provide for said three-years notes and for other corporate purposes, the company disposed of \$10,000,000 of its ten-years, seven per cent, secured gold bonds dated June 1, 1920, to mature on June 1, 1930, interest payable semi-annually, on June 1 and December 1. During the year, first-lien, equipment bonds aggregating \$1,959,000 were purchased through the sinking fund established in connection with their issue. In payment for the 1,500 freight cars allocated to your company by the United States Railroad Administration, just prior to the end of Federal control, there were issued during the year, \$3,912,000 in the aggregate of equipment notes, bearing date as of January 15, 1920, carrying interest at the rate of six per cent per year, payable semi-annually, of which \$260,800 matured on January 15, 1921, and an equal amount will mature on January 15 of each year, to and including the year 1935.

The sum of \$395,040, being one per cent of the par value of the first and refunding mortgage gold bonds outstanding on June 1, 1920, was paid during the year to the trustee under the first and refunding mortgage making the total paid to December 31, 1920, \$3,636,230. Of the amount paid during the year, \$337,690.83 was expended upon additions and betterments to the mortgaged property in accordance with the mortgage agreement.

There was accumulated in the Coal Department sinking fund during the year, in accordance with the ordinance passed on May 9, 1899, and amended

on May 10, 1910, \$353,777.34, which has been applied to reimburse the treasury for coal lands purchased and unmined coal in Pennsylvania.

The usual payment of \$650,000, required under the terms of the First Lien Equipment Trust indenture, was made, making the total paid to date, \$8,450,000. This has been increased by accumulations or interest on balances and investments.

During the year there was received from the United States, in partial payment of compensation for the taking over of the company's property in December, 1917, and its subsequent occupation and use until the close of business on February 29, 1920, by the United States, the sum of \$1,285,000, which, with the amounts paid on account of the years 1918 and 1919, aggregating \$14,099,100, makes a total of \$15,384,100. There was also received from the United States, on account of the guarantee of net earnings provided for by the Transportation Act of 1920, the guarantee period extending through August 31, 1920, the sum of \$2,195,000. The balance on both accounts with the United States, subject to adjustments which may be necessary on account of additions to the property during Federal control, and other matters not yet agreed upon, and the establishment of the maintenance charges during the guarantee period, will be provided for in the final settlement with the Government.

COAL DEPARTMENT.

The anthracite produced by your system corporations during the year 1920, including the product of washeries, aggregated 8,089,182 long tons, a decrease of 116,313 tons, or 1.41 per cent below 1919. The year's output was 11.39 per cent of the total output of Pennsylvania mines and washeries, which was 71,023,257 long tons, or 1.5 per cent more than in 1919. Production was reduced during the year by high water in some of the mines, resulting from seepage on account of the sudden melting of the heavy snowfall of the winter of 1919-1920, and by the refusal of many employees to work during the period of the so-called "vacations" which were taken on account of reluctance to accept the wages award made in August, 1920, by the Anthracite Coal Commission. This Commission, which consisted of one representative of the public, one representative of the employees and one representative of the operators, was appointed by President Wilson, on June 3, 1920, after prolonged negotiations between the employees and the operators had failed to produce an agreement. These negotiations were referred to in the annual report for last year, in which it was stated that the agreement of the employees had expired on March 31, 1920, and that efforts to negotiate a new arrangement were in progress, under a stipulation that any change in wages should be retroactive to April 1 of that year. After these negotiations had proceeded between the parties directly in interest for about two months, without an agreement being effected, the Secretary of Labor intervened and after conferences in Washington, at which the Department of Labor was represented, suggested a compromise which was accepted by the operators but rejected by the employees. The appointment of the Commission by the President followed this rejection. Hearings were held at Scranton from June 24 to July 20, and an award was made on August 30, which became the agreement of September 2, retroactive to April 1, 1920. This agreement continues the award of the Anthracite Coal Strike Commission, made in 1903, including the provision that there shall be no discrimination against or in favor of members of any labor organization and no interference by any employee or organization with those who are not members. It provides for increases in wages rates which are estimated by the Department of Labor of the United States to amount to 17.4 per cent of the rates previously in force, and 138.6 per cent over the rates in force prior to the European war. It also reduced the standard day to eight hours in the case of the few classes of employees who had continued to have a longer work day. For the first time since the advent of the United Mine Workers of America in the anthracite fields, an agreement has been made to which that organization, through its district organizations numbers 1, 7 and 9, appears as a party to a contract with the anthracite operators. Despite this concession, and the agreement prior to the submission to arbitration to accept the award of the Commission, both union officers and certain of the employees expressed considerable dissatisfaction, with the result that demands for re-opening the arbitration were accompanied by refusals to work which were not at all disguised, although they were called "vacations." President Wilson refused to intervene further until work was fully resumed but upon such resumption, requested the negotiating committees to reconvene for the purpose of adjusting inequalities the existence of which might mutually be agreed upon. The negotiating committees have resumed discussion of certain alleged inequalities. The questions which can properly arise before these committees do not include any relating to the standard rates established by the award, as of course it is recognized that an arbitration award thus made must be given effect in accordance with its terms and for the full period it was intended to cover.

During the latter part of 1920, work was commenced on a new breaker located in Scranton, to have a capacity of 5,000 tons per day, to be built of steel and to have a minimum amount of inflammable material, thus reducing the fire risk to the lowest practicable limit. This breaker, replacing the Marvine breaker, which was constructed of wood, has been completed and is now in operation.

RAILROAD DEPARTMENT.

The United States continued in possession, through the month of February, 1920, of your railway property and that of your system corporations in the United States, together with your boat lines operating on Lake Champlain and Lake George, and these properties continued to be operated through the United States Railroad Administration until surrendered to your officers on March 1, 1920. The whole period during which your property was thus out of your possession and control was from noon on December 28, 1917, to and including midnight of February 29, 1920. All operations during the months of January and February, 1920, like those of the previous months of Federal control, were for the account of the United States, which were responsible for all expenses of operation, including maintenance and for all taxes except war taxes, and for compensation in the nature of rent for your temporary expropriation at the rate of \$7,042,144.21 per year, in accordance with the contract with the Director-General of Railroads, acting for the United States and for the President, which was executed on December 9, 1919. In addition, you will be entitled to compensation in respect of certain additions to the properties provided for your account during the period of Federal control.

Notwithstanding the pledges contained in President Wilson's proclamation of December 27, 1917, and the Act of Congress of March 21, 1918, and the contractual obligation deliberately assumed on December 9, 1919, your properties were not adequately maintained while they were in the possession of the United States nor were they returned to your control in condition as good or as fully equipped as that in which they were taken. The extent of this undermaintenance may be illustrated by the items representing renewals of rails and ties. The average number of new rails used for replacements, during the test period, was 8,223 gross tons, during Federal

control it was 7,607 gross tons; the yearly average of renewals of ties during the test period was 339,872, during Federal control it was 270,100. Moreover, the ties used for replacement during Federal control were inferior in quality.

Under date of May 29, 1919, Mr. Walker D. Hines, as Director General of the United States Railroad Administration, issued a general letter to all Regional Directors, dealing with maintenance expenses, which while treating the subject from the point of view of economy, appears to have been construed by the recipients as a demand for reductions in these expenses almost irrespective of the expedites necessary. By telegram dated two days earlier Mr. Hines had advised the Directors that "for the month of June, 1919, the maintenance of way ratio of each road ought not to exceed its average yearly ratio of the test period." The foregoing were followed by a circular of instructions to the same officers, issued by Mr. W. T. Tyler, Director of Operations, and dated June 2, 1919, in which the Regional Directors were advised in part as follows:

"There is no obligation on the Government to replace upon the properties the same quantities of material and labor placed upon them during the test period."

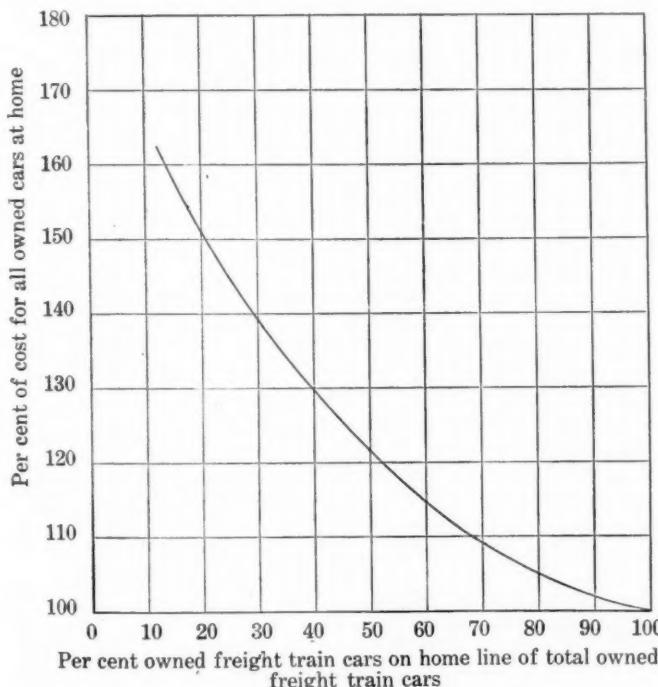
This circular of instructions repeated the order to make the ratio of the test period the maximum limit of June expenditures and its whole tenor was towards a sharp curtailment in actual maintenance. It included the following:

"There is grave danger that the 1918 and 1919 Maintenance of Way expenditures may substantially exceed the obligations unless immediate action is taken to control such expenditures. The Director General's telegram of May 27th, requiring adherence to the test period maintenance ratio, was intended to act as an immediate and effective curb for the month of June and until a broader policy could be formulated and promulgated for the remaining six months of the year."

"The tendency to overmaintain appears to be general. The obligation of the Federal Managers and General Managers to the Government is to see to it that if this tendency has play on their properties it must be corrected effectively and at once, so that the Government will not be called upon to pay for maintenance in excess of the obligations."

To fully appreciate the foregoing, it is necessary to note that June is a month in which weather conditions are generally favorable to maintenance work and in which the necessity for making up for the substantial cessation of such work during the months of severe weather ought to result in expenditures very much in excess of the yearly ratio. Moreover, by making the ratio of such expenses to operating revenues during the test period the limit, the Director General resorted to a standard established under radically different conditions. The freight and passenger rates of June, 1919, were not nearly as much above those of the test period as were wages and prices of the materials required for replacements. Hence the adoption of the ratios to revenues of the test period inevitably led to the application of substantially less labor and materials. Careful examination of subsequent instructions, to the end of Federal control, does not indicate the substitution of any more liberal policy. Under the control of such instructions it is apparent that adequate maintenance was impossible.

The dispersal and scattering of freight-car equipment throughout the United States, regardless of ownership and special adaptability to the requirements of the owning line, was a characteristic incident of Federal control. Like other ventures of the Railroad Administration, it diminished efficiency and increased expenses. A study based upon information covering the test period, received from eighty railroads owning eighty-two per cent of the freight train car equipment of the country, has determined the relation between the cost of repairs to freight cars and the per cent of owned cars on home line. This relation appears in the diagram below, which shows that as the proportion of owned cars away from home increases, the cost of repairs increases. This conclusion accords with experience, because it is known that the immediate application of general repairs, when needed, produces a lower total cost of maintenance over a period of time than the application of temporary repairs plus the cost of deferred general repairs.



Curve showing change in cost of freight train car repairs to change in percentage of owned cars on home line.

It was noted in the annual report for last year, that your Board of Managers had accepted the conditions prescribed by the Transportation Act of 1920 in order to become entitled to the guarantee by the United States for the period from March 1, to August 31, 1920, inclusive, of net earnings

equal to one-half of the annual "standard return" of the Federal control period computed in accordance with the Act of March 21, 1918. On February 3, 1921, claim was filed with the Interstate Commerce Commission in accordance with its order of October 18, 1920, for a net balance due from the United States on account of this guarantee, amounting to \$3,266,465.67. The amount claimed represents the difference between the actual net income for the six months of the guarantee period, and one-half of the annual standard return, as finally established by the Interstate Commerce Commission, together with proper adjustments for maintenance which should be charged against this period, and increases in the rate of standard return by reason of additional facilities provided at your expense during Federal control. The amount of \$3,266,465.67 represents, in part, estimates covering transactions which had not been settled at the time claim was made and will be subject to variation to the extent that actual results differ from these estimates.

During the period of Federal control, and the ensuing six months of the guarantee period, that is, to and including August 31, 1920, your income account was not affected by the operating results obtained and these results were directly of importance only to the extent that they suggest the conditions under which the property was returned and operations for your account commenced. The following data relating to operating results combine the figures of the two months of Federal control, the six months of the guarantee period, and the four months of operation for your account which together constitute the calendar year 1920.

The railway operating revenues amounted, in 1920, to \$45,354,299, which was \$10,604,590, or 30.52 per cent more than in 1919, and \$19,880,085, or 78.04 per cent more than the average annual revenues for the period from July 1, 1914, to June 30, 1917, known as the "test period," which, by the Act of March 21, 1918, was made the basis of the "standard return" during Federal control. Operating expenses during 1920, amounted to \$42,126,330, an increase of \$10,239,619, or 32.11 per cent over 1919, and \$24,557,635, or 139.78 per cent over the annual average of the test period. Operating income, before deduction of taxes, was therefore \$3,227,969, an increase of \$364,971, or 12.74 per cent more than in 1919, but \$4,677,550, or 59.17 per cent lower than the average of the test period. Freight receipts were \$9,680,200, or 32.83 per cent more than in 1919 and \$18,047,835 or 85.47 per cent more than the average of the test period. Freight movement during the year was equivalent to the movement of 4,265,734,874 tons one mile which is to be compared with 3,531,432,611 tons one mile in 1919, and 3,229,732,728 the annual average of the test period, the increase compared with 1919 being 20.79 per cent and as compared with the test period 32.08 per cent. Average receipts per ton mile amounted to 9.18 mills in 1920, 8.35 mills in 1919, and 6.54 mills during the test period, the average for 1920 being an increase of 9.94 per cent over 1919 and 40.37 per cent over the test period.

There were no extraordinary changes in the relative volume of the different classes of traffic handled as compared with 1919, the general increase for the year being attributable to the return to your railway of traffic diverted to other routes under orders of the officers of the Railroad Administration, while the railways were under Federal control.

Passenger movement aggregated 130,971,551 passenger miles, which is to be compared with 132,884,475 in 1919 and an annual average for the test period of 130,984,189 passenger miles, a decrease from 1919 of 1.44 per cent. Mileage of passenger trains increased 4.98 per cent over 1919, but decreased 17.55 per cent as compared with the average of the test period. Passenger car miles show an increase of 7.78 per cent over 1919 but a decrease of 14.11 per cent below the average of the test period. Average receipts per passenger mile traveled were 2.88 cents in 1920, 2.45 cents in 1919, and 2.23 cents during the test period. Receipts per passenger train mile were \$1.5836 in 1920, \$1.4359 in 1919 and \$1.0106 during the test period, showing an increase over 1919 of 10.29 per cent and over the test period of 56.70 per cent. Per passenger car mile, the receipts of 1920 increased 74.1 per cent over 1919 and 50.48 per cent over the test period.

Mail revenue during 1920, amounted to \$367,350, an increase of \$227,699, or 163.05 per cent over 1919, and \$229,298, or 166.10 per cent over the average for the test period.

Miscellaneous revenue of 1920 shows a decrease of 43.75 per cent below 1919, principally on account of credits to this account during 1919, there having been removed from storage during that year a large tonnage of anthracite which had been stored during 1918.

Although the foregoing shows considerable increases in revenues, the operating income of the year, as already noted, shows but a slight increase over 1919, and a heavy decrease as compared with the average for the test period, this decrease amounting to 59.17 per cent. This result was occasioned by the excessive increase in operating expenses resulting from advances in wages, the changes in the conditions of employment as compared with the pre-war period, and the continued high cost of materials and supplies. The Railroad Labor Board of the United States, created by the Transportation Act of 1920, granted increases by an order issued on July 20, 1920, and retroactive to May 1, of that year, which required an increase in your monthly payrolls of approximately twenty-one per cent. As compared with 1919, the expenses for maintenance of way and structures of 1920 increased \$937,045, or 22.43 per cent and the increase over the average of the test period was \$3,062,983 or 149.27 per cent. Expenses for maintenance of equipment increased \$2,756,918 or 27.62 per cent over 1919, and \$7,828,111, or 159.47 per cent over the average of the test period. Transportation expenses increased \$6,062,908, or 38.85 per cent over 1919, and \$12,445,128, or 134.91 per cent over the test period. Traffic expenses show an increase of \$149,418 or 63.04 per cent over 1919, principally on account of the re-establishment of traffic agencies for the development of business which were abolished during Federal control.

Increases in rates of wages and changes in the terms and conditions of employment made during Federal control and, subsequent to its termination, by the Railroad Labor Board, greatly increased the operating expenses which the railways have currently to meet. Rules which might not be seriously objectionable under special and local conditions may be wholly unworkable when given general application and it is now evident that rigid standardization of wages and working conditions has become an enormous burden upon the railway industry. Nothing is more unequal than the equal treatment of unequal. The wide area of the United States, their diverse resources, industries and economic standards and methods, have imposed varying conditions upon the performance of railway services with widely different demands upon labor and an equally wide range in the reasonable requirements of labor itself. To ignore these differences in fixing the relations between employees and railway employers must be as unsatisfactory in its results as it would be to build all railways to the same standards of grades, curvature and capacity, regardless of differences in traffic requirements and in local topography. Yet such disregard of essential differences is embedded in the so-called standardization of wages and terms of employment which is an evil legacy from the period of Federal control.

The Railroad Administration made no effort to adjust the charges for railway service to the heavily increased expenses which it assumed by successive concessions to importunities for higher wages and reductions in the labor exchanged for wages. Unwillingness to accept responsibility for

these increased expenses to the extent of putting in force rate-schedules adequate to meet them resulted in the operation of the railroads at a heavy loss to the United States and an accumulating deficit in the income account of the Railroad Administration which was forced upon the tax-payers. Whether those who pay taxes accept such burden with less protest, or with less effective protest, is a problem which the Railroad Administration or some higher authority must be assumed to have resolved to its own satisfaction.

The Transportation Act of 1920, provided for the adjustments in rates which the Railroad Administration had refused to make. Before this adjustment could be made, the Railroad Labor Board made the further increases previously referred to, with the result of augmenting the amount of additional revenue necessary to be produced. Application was promptly made to the Interstate Commerce Commission which determined that the rate-schedule ought to produce a return of six per cent upon the aggregate value of railway property as determined for each of the four districts into which the country was divided by its order. The district in which your railway is located was designated the "Eastern Rate Group" and includes the whole region between the Canadian frontier, the Atlantic ocean, the Great Lakes and Mississippi river and (roughly) the Ohio and James rivers.

General authority for increases in freight and passenger rates was accorded, the new rates to go into effect upon August 26, 1920. In estimating the changes necessary to produce the required revenue the Interstate Commerce Commission assumed (1) the continuance of substantially the then existing volume of traffic and (2) that rates for services wholly within the several States would be contemporaneously advanced in the same ratio as interstate rates. Neither assumption was justified by the results. Traffic has diminished to an aggregate far below that considered in the estimates and the opposition of certain States to the adjustments indicated proved inconvenient and costly and has, in several instances, resulted in litigation carried to the Supreme Court of the United States.

Railways in the territory served by your lines were granted a twenty per cent increase in passenger fares. All interstate rates were at once adjusted in accordance with this authority. But a corresponding adjustment of fares for travel within the State of New York was delayed by the opposition of the Public Service Commission for the Second District of New York. A supplementary application to the Interstate Commerce Commission resulted in an order proportionately to increase the State rates on November 29, 1920, but the adjustment was again delayed by an injunction obtained by the Public Service Commission. An order vacating this injunction was obtained on December 18, 1920, and, except as to commutation fares which have not been changed, the twenty per cent advance became effective on December 20, 1920. The broad question of the authority of the Interstate Commerce Commission to authorize adjustments in rates for services rendered by interstate carriers but wholly within the limits of single States has been submitted to the Supreme Court in several cases, including one to which your company is a party. In another of these suits the Public Service Commission of New York is the plaintiff and the Interstate Commerce Commission a defendant.

Coincident with the increases in passenger fares, a surcharge of fifty per cent of the charge for accommodations in parlor and sleeping cars, the proceeds of which accrue to the railway carriers, became generally effective.

The increase in mail revenue, above noted, resulted from an order of the Interstate Commerce Commission, issued in pursuance of the Act of Congress of July 28, 1916, submitting the question of reasonable compensation for transportation of mails for its determination. The new rates were retroactive to November 1, 1916, the payments in adjustment of compensation for services during Federal control accruing to the Railroad Administration.

The increase in freight rates necessary to produce the return approved by the Interstate Commerce Commission to the railways in the Eastern Rate Group was computed at forty per cent, if applied uniformly to all freight movement and on the assumption of the continuance of a volume of traffic not smaller than that used in making the estimates. An increase of forty per cent was granted as to traffic originating and ending within the region, but as to traffic to or from other regions the permitted advance was only thirty-three and one-third per cent. No advances in the minimum carload charge, the minimum class scale or in the minimum charge for shipment were authorized.

The Interstate Commerce Commission also authorized increases in rates applicable to milk traffic, switching, storage and demurrage and new schedules affecting these services were put in force on August 26, 1920.

The results of the changes above summarized have been disappointing. Not only was there failure, on the part of the Commission, to authorize the full increases indicated as necessary by the estimates on which it relied, but experience has shown that however thoroughly those estimates were warranted when made, they were too hopeful as to the continuance of business activity and consequent heavy traffic. Moreover, the estimates assumed the continuance of the revenues then arising from express business and these revenues were almost immediately reduced in the sum of \$32,000,000 per year in the Eastern Rate Group by revision of the express contracts. The difference between the revenue of the carriers of this group from inter-territorial freight, advanced thirty-three and one-third per cent, and that which would have been realized at a forty per cent advance, is about \$50,000,000 per year. The net result is that the railway carriers in this group are now earning not less than \$175,000,000 per year less than six per cent upon the total of their investments in property devoted to public use. A substantial portion of this deficit will probably be overcome when these carriers obtain the full benefit of reductions in the cost of fuel and other supplies.

INDUSTRIAL DEPARTMENT.

One hundred and fifteen new industries were located on the tracks of your company during 1920, as compared with one hundred and eleven in 1919. Sixty-three extensions to old industries and twenty industrial side-tracks were constructed; the corresponding numbers of 1919 were ten and seven, respectively. Representatives of your industrial department have continued to co-operate with the various activities of the Farm Bureau Association and with the Department of Farms and Markets of the State of New York.

FEDERAL VALUATION.

The Director of Valuation of the Interstate Commerce Commission furnished your officers, during 1920, with preliminary statements showing proposed reports to the Commission concerning value of your lands in rights of way and elsewhere, and also of the structures pertaining to your railway. This was in accordance with the practice of the Bureau of Valuation of affording opportunity to check for errors and omissions and to submit objections to proposed conclusions before formal serving of the tentative reports provided for by the Statute of 1913. These reports have been carefully reviewed in your Valuation Department, and criticisms have been submitted showing in detail claims for corrections of errors

and increases in unit prices above those proposed by the Bureau of Valuation. The report on land values showed a total value of lands used for common carrier purposes of \$7,115,901, and the engineering report estimated the cost of reproduction new, of all structures used for common carrier purposes, as \$97,693,962. The cost of reproduction, less depreciation, was stated as \$73,760,925, indicating average estimated depreciation of 24.50 per cent. The criticisms submitted show that these estimates of value are substantially below those which should be allowed. It should be understood that the inventory upon which the engineering report was based, was taken as of June 30, 1916, but that the unit prices applied were those of June 30, 1914, as estimated by the Bureau of Valuation. The figures stated do not, therefore, include any property added after June 30, 1916, nor do they take into account the large increases in prices of materials and labor since 1914. On these accounts, the figures stated, even when corrected in accordance with the criticisms which have been submitted, will not at all indicate the present value of your physical property. The total assigned as the value of lands is fundamentally erroneous for the reason that it is based wholly upon official estimates of the value of adjacent lands, averages obtained therefrom having been applied to the area of your lands, and includes no allowances for costs of acquisition, damages and other items that invariably increase the cost of railway rights of way. Objection has also been made to the estimate of twenty-four per cent depreciation below new condition. It is considered that this estimate has been obtained by methods and arbitrary assumptions which necessarily lead to gross over-statement and indicate a condition entirely contrary to the facts. Objections to this result and the methods by which it was obtained, will be pressed in every suitable way. The cost of this work of valuation, to the end of 1920, amounted to \$502,464.52, of which \$365,-930.92 was charged to your operating expenses to December 31, 1920, and \$136,533.60 to the operating expenses of the Railroad Administration during the period of Federal control.

ALLIED TROLLEY LINES

An increase to seven cents in the rate of fare charged by this company authorized by the Public Service Commission, which took effect on January 29, 1920, was recorded in the annual report for last year. At the time this rate became effective, the labor expenses of the company were adjusted to forty-five cents per hour, the standard rate then being paid to conductors and motormen. This forty-five cents rate represented an increase of fifty per cent over wages in force in the year 1918. A rate of sixty cents per hour for motormen and conductors was established early during 1920, in the cities of Rochester, Utica, Syracuse and Schenectady, and on July 1, 1920, it became necessary for the United Traction Company to establish the same rate, the alternative being a strike, and it was necessary to make proportionate advances in the wages of other employees. Past operations clearly show that the increased wages could not be met out of revenues unless a further increase in fares could be obtained and this involved application to the Public Service Commission. The new basis of wages was therefore put in force under a temporary agreement which provided for its discontinuance on or after November 1, 1920, in case prior to that date, relief in the form of increased fares could not be obtained. Prompt application was made to the Public Service Commission, which was asked to authorize a standard rate of fare of ten cents per passenger. This application followed the customary course with successive hearings and was finally submitted for decision on briefs and oral argument, on November 10, 1920. At an early stage in the proceedings, question was raised as to the jurisdiction of the Commission to grant the application as to certain lines in the City of Troy, and as to the City of Rensselaer, representatives of those cities contending that lower fares than those sought were required by franchise restrictions in the nature of contracts, the company contending that there were no effectual restrictions, and that those formerly existing had been abrogated by subsequent agreement and by legislation. A preliminary ruling favorable to the company on all questions of franchise restrictions except as to the relatively unimportant claim made by the City of Rensselaer, was rendered by the Commission. Final decision was not rendered until January 21, 1921, and in this decision, the earlier ruling was reversed and the Commission held that it was without power to grant the relief sought as to some of the principal lines in the City of Troy. Considering itself without power to afford substantial relief except as to the City of Albany, the Commission granted an increase of the standard fare in that city and zone to eight cents but required the sale of four tickets for thirty cents. At that same time, the company was directed to carry passengers within the City of Rensselaer for five cents, between any point in Rensselaer and the plaza in Albany for six cents, and in the cities of Troy, Watervliet, Cohoes, Green Island, Waterford and Colonie, a six cents fare was prescribed. It is estimated that these changes in fares amount to a reduction in annual revenue, as compared with the standard seven cents fare, of \$86,000. The opinion of the Commission plainly expressed the view that operating expenses would soon be substantially reduced through return to a lower basis of wages and some decline in the prices of materials and supplies. The following is quoted from the opinion:

"The wages in effect immediately prior to July 1st were about 75 per cent of the present scale. What the company will be obliged to pay in the future we can not tell. We assume that both the men and the officials of the company are awaiting the action of the Commission in this proceeding before renewing negotiations."

"It thus appears that wages have increased enormously during the war reconstruction period. We do not believe the Commission can assume that the present scale is to continue. It is evident the company is unwilling to continue it under the present rates of fare, and the existing agreement seems to assume that unless the fares are increased the present scale will not continue. The rate increases granted by the Commission in 1918 and 1920 have been more than absorbed by the increased wage scales. In substance, therefore, the Commission in the last two rate orders as well as in the order about to be made has been and is dealing not with return on the company's investment but with wages of the employees."

"It is a matter of general knowledge, of which the Commission may properly take notice, that the costs of both labor and materials which have so sharply advanced within a brief period have begun to decline. The apex seems clearly to have been passed. In view of this condition and of the terms of the last wage agreement of this company, we do not feel justified in fixing rates upon the assumption that the present wage scale of the company will continue any considerable time. It may be that wages will not decline as rapidly as they have advanced, but it seems clear that they can not remain at the present point when the general cost list is receding."

"Under the circumstances, we think we must assume, in arriving at an estimate of expenses for the coming year, that the trend of wages and other expenses will be downward."

The authority having control of the company's revenues having thus formally given notice that it would not acquiesce in an adjustment of rates sufficient to meet the costs of operation at the rates of wages in

force, an adjustment of wages more favorable to the company and that might be expected to have the approval of the Commission, became imperative. On January 22, 1921, the day after the opinion was rendered, employees were notified that the provision to terminate the wages agreement would be exercised and that the company would return to the wages prevailing on June 30, 1920, the change to take effect at midnight on January 28, 1921, which the Commission had fixed as the effective date of the changes in rates required by its order. The employees refused to accept this readjustment and a strike ensued. After some days, during which the property remained idle, an order was entered by the Public Service Commission, requiring the company to resume operations and efforts to do so with the aid of new employees were promptly commenced and have been continued; disorderly and violent resistance to these efforts occurred and for a time the operation of cars was irregular, traffic inconsiderable and the expenses high. A restraining order prohibiting illegal interference with the efforts of the company to render public service was entered in the Supreme Court on March 23, 1921. The violations of public order have diminished and seem tending to disappear and operations and traffic are gradually moving towards the normal.

A statute adopted at the present session of the Legislature, revising the Public Service Commission law, extends the authority to approve changes in rates with the effect of removing such limitations as were held to exist in Troy and Rensselaer. Under this statute these companies should be able to obtain reasonable rates of fare.

The operating revenues of the Hudson Valley Railway amounted to \$1,099,072, operating expenses to \$986,998, taxes to \$55,025 and net operating income to \$57,049. These data show increases in operating revenues or 13.14 per cent, in operating expenses of 20.97 per cent, in taxes of 6.78 per cent and a decrease in net operating income of 45.11 per cent. Under authority obtained from the Public Service Commission on account of the insufficiency of the revenues at the former rate, the standard zone rate of this property was increased on June 29, 1920, to seven cents. The wages of the employees of this company were necessarily increased on July 1, 1920, to the basis of sixty cents for conductors and motormen, previously adopted in neighboring cities, and put in force on the same date by the United Traction Company. In making this change the company reserved the same right to discontinue the higher basis which was reserved by the United Traction Company. During September, application was made to the Public Service Commission to permit an increase in the zone rate to ten cents, except as to local service in Fort Edward, Hudson Falls, Glens Falls and Saratoga. After hearings by the Commission, the application was submitted on briefs and oral argument during November, but no decision has been rendered.

The operating revenues of the Plattsburgh Traction Company amounted to \$33,122, a decrease of 12.29 per cent; operating expenses to \$29,625, an increase of 12.43 per cent, and net operating income to \$1,714, a decrease of 82.46 per cent. The wages paid by this company have been lower by reason of local conditions, than those paid in the Capitol District, but on June 15, 1920, it was necessary to make an increase of five cents per hour to motormen and conductors, making the standard rate for such employees thirty cents per hour, with corresponding increases to other employees. Corresponding adjustments in fares became necessary and an advance to seven cents for service outside the city limits was obtained without opposition. It was also necessary to increase to seven cents, the rate within the city of Plattsburgh and the application for this change resulted in a hearing before the Public Service Commission. A favorable decision was rendered on October 14, and the increased rate of fare was permitted to become effective on October 21, 1920.

The operating revenues of the Troy and New England Railway amounted to \$39,442, an increase of 8.27 per cent; operating expenses to \$44,397, an increase of 24.72 per cent, and there was an operating deficit of \$6,825 which compares to the deficit of \$710 in the previous year. The operations of this company are so closely related to those of the United Traction Company that it was necessary to extend to its employees the conditional advance in wages which was accorded to those of the latter on July 1, 1920. Even without this increase, the operating expenses would have required additional revenue. Application for an increase in the rate of fare to eight cents with proportionate increases in round trip fares and providing for more adequate rates for chartered cars, was made to the Public Service Commission by a tariff filed on November 20, 1920. This tariff was suspended on the application of the town of North Greenbush, through which the property runs, and after hearing, decision was rendered permitting the advance rates to go into effect on January 29, 1921. The employees of this company are members of the organization which includes the former employees of United Traction Company and the strike on that company included the Troy and New England.

LITIGATION

Substantially all the railways west of the Hudson river, including your company, have been made defendants in a proceeding instituted by the New York, New Haven and Hartford, Central New England Railway, Central Vermont Railway, Rutland Railroad, Boston and Maine Railroad, Maine Central Railroad and Bangor and Aroostook Railroad before the Interstate Commerce Commission, claiming increased divisions on freight traffic interchanged at the various New England gateways. Numerous hearings have been held, resulting in a bulky record, and oral argument before the full Commission has been set for April 7, 1921. While the Transportation Act of 1920 empowers the Commission to establish divisions of rates, your counsel consider that the present proceeding is not within its jurisdiction. The New England railways appear to support their complaint upon grounds which could not lawfully be made the basis of an order in respect of divisions. Moreover, it is considered that the existing divisions are, and long have been, rather unduly favorable to the New England lines.

GENERAL REMARKS

The business of the United States is encountering a serious period of depression. Taxation remains at the war level and its burden is increasingly felt as the artificial conditions resulting from war activities disappear. Incomplete financing of the war in the form of an heavy floating governmental debt, continues to interfere with normal financial operations. Prices in general seem to be tending toward more normal levels and wages are tending in the same direction but more sluggishly, in spite of extensive unemployment. These factors point to adjustments that must precede any return to satisfactory conditions. Basic conditions are essentially sound. In a large degree the people of the country have become the owners of their own industrial enterprises, formerly heavily mortgaged to foreign investors, while they have invested largely in foreign securities and on the international balance sheet, the Nation has become a creditor where but lately it was a debtor. If men exercising legislative and other authority will build soundly upon these foundations, general prosperity should soon be realized.

By order of the Board of Managers,

L. F. LOREE, President.

[Adv.]

Railway Officers

Executive

H. S. Ray, assistant general passenger agent of the Chicago, Rock Island & Pacific, with headquarters at Des Moines, Iowa, has been promoted to assistant to the president, with headquarters at Chicago, effective May 1, with jurisdiction over the newly created department of public and labor relations.

W. A. Webb, vice president and general manager of the St. Louis Southwestern with headquarters at Tyler, Texas, has resigned, effective May 10. This position has been abolished and its duties have been taken over by **F. W. Green**, vice president in charge of operation with headquarters at St. Louis, Mo., and Tyler, Tex.

Financial, Legal and Accounting

E. B. Conrad, auditor of freight accounts of the Oregon Short Line, with headquarters at Salt Lake City, Utah, has been appointed freight auditor of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, effective May 1.

F. H. Harvey, general auditor of the Pittsburgh & West Virginia and the West Side Belt, has been elected secretary in addition to his other duties, succeeding **H. C. Moore**, secretary and treasurer. Mr. Moore will continue as treasurer of the company.

H. T. Newcomb, whose appointment as general solicitor of the Delaware & Hudson was announced in the *Railway Age* of March 18 (page 741), was born at Owasso, Michigan. He graduated from Columbian (now George Washington) University in 1891 with the degree of bachelor of law and received his master's degree the following year. From 1906 to 1916 Mr. Newcomb was senior member of the law firm of Newcomb, Churchill and Frey at Washington, D. C. From 1916 until the time of his recent appointment Mr. Newcomb was engaged in the general practice of law in New York. A great portion of his work has been in connection with railway litigation. He is the author of "Railway Economics," "The Postal Deficit," "Force and Effect of the Orders of the Interstate Commerce Commission," "Constitutionality of the Delegations of the Interstate Commerce Law" and other works on similar subjects.

Operating

J. E. Hood has been appointed general manager of the Uintah with headquarters at Mack, Colo., succeeding M. W. Cooley, effective April 8.

O. F. Ohlson has been appointed trainmaster of the Northern Pacific, with headquarters at East Grand Forks, Minn., effective April 15, succeeding F. W. Lyons.

C. H. Bland has been appointed trainmaster of the Louisiana Railway & Navigation Company, with headquarters at Shreveport, La. **W. E. Salyards** has been appointed chief dispatcher with the same headquarters.

E. G. Goforth, assistant general manager of the International & Great Northern, with headquarters at Palestine, Tex., has been promoted to general manager, succeeding **A. G. Whittington**, who has resigned.

F. S. Rosseter, assistant superintendent of the Toronto Terminals of the Canadian Pacific, with headquarters at West Toronto, Ont., has been transferred to a similar position, with headquarters at Chapleau, Ont., succeeding **V. T. Boughton**, resigned.

F. S. Deveny, trainmaster of the Baltimore & Ohio Chicago Terminal with headquarters at Chicago, has been promoted

to superintendent with the same headquarters. **R. A. Barlow**, assistant trainmaster, has succeeded Mr. Deveny as trainmaster. The position of general superintendent of this company has been abolished. These changes were effective May 1.

H. H. Hooper, superintendent of transportation of the St. Louis-Southwestern with headquarters at Tyler, Texas, has resigned, effective May 10. The position which he occupied has been abolished and its duties have been taken over by **W. Mosby**, transportation assistant with headquarters at St. Louis. Mr. Mosby's headquarters have been changed to Tyler, Texas. The Illmo and Pine Bluff divisions have been consolidated and **W. E. McGraw**, superintendent of the Illmo division, has been appointed superintendent of the two division. **K. C. Marshall**, superintendent of the Pine Bluff division has resigned and his office has been abolished. **E. Richards**, superintendent of telegraph and safety with headquarters at Tyler, has been appointed acting superintendent of the Tyler division, succeeding **D. C. Dobbins**, resigned.

Traffic

P. L. Shepherd, general freight and passenger agent of the Gulf & Ship Island, with headquarters at Gulfport, Miss., has resigned.

W. D. Cook has been appointed general freight agent of the Gulf & Ship Island, with headquarters at Gulfport, Miss., effective May 10, succeeding P. L. Shepherd, resigned.

F. W. Elder, commercial agent of the Gulf Coast Lines, with headquarters at Houston, Tex., has been transferred to San Francisco, Cal., succeeding E. J. Naylor, who has resigned, effective May 1.

W. B. Gheen, division freight agent of the Atlantic City Railroad and the New York division of the Philadelphia & Reading, has been transferred in a similar capacity to the Philadelphia division. **G. A. Buck**, agent at Pottsville, Pa., has succeeded Mr. Gheen as division freight agent of the New York division and the Atlantic City.

Engineering, Maintenance of Way and Signaling

William Hood, chief engineer of the Southern Pacific, whose retirement from active railroad service, effective May 3, was announced in the *Railway Age* of May 6 (page 1100), was born on February 4, 1846, and was educated in the scientific department of Dartmouth College. He entered railway service in May, 1867, as a rodman on the Central Pacific, being engaged in the construction of that line through the Sierra Nevada mountains at the time of the building of the first transcontinental line. He was appointed assistant engineer on January 1, 1868, and served in that position until June 1, 1872, when he became assistant engineer of the Southern Pacific. Three years later he was promoted to chief assistant engineer, a position which he held until June, 1883, when he accepted an appointment as chief assistant engineer of the Central Pacific. He was promoted to chief engineer of that road on October 10, 1883, but in August, 1885, he returned to the Southern Pacific as chief engineer of the Pacific System. On June 1, 1900, he was promoted to chief engineer of the Southern Pacific. Mr. Hood retired on the 54th anniversary of his first connection with the Southern Pacific company.



Wm. Hood

R. W. Barnes, assistant engineer of the Southern Pacific, with headquarters at Portland, Ore., has been appointed assistant engineer of the Southern Pacific, Texas Lines, with headquarters at Houston, Tex. **H. L. Archbold** succeeds Mr. Barnes.

W. S. Hanley has been appointed chief engineer of the St. Louis-Southwestern with headquarters at Tyler, Texas, succeeding **A. A. Mathews** resigned. **C. C. Pettigrew**, division engineer with headquarters at Illmo, Mo., has been appointed division engineer of the Illmo and Pine Bluff divisions, which have been combined, with headquarters at Pine Bluff, Ark. **W. N. Raleigh**, division engineer with headquarters at Pine Bluff, has resigned and his position has been discontinued. These changes were effective May 10.

Mechanical

W. P. Kershner, who has been appointed superintendent of motive power of the International & Great Northern, with headquarters at Palestine, Texas, was born at West Leesport, Pa., August 16, 1885. He graduated from high school at Reading, Pa., in 1901 and began his railroad career as a night caller, for the Philadelphia & Reading. Shortly thereafter he became a machinist apprentice and later a machinist for the Reading and resigned to attend the University of Pennsylvania, from which he graduated in 1908. He then entered the employ of the Louisville & Nashville at South Louisville, Ky., as a layer-out on new engines. Later he served the Chicago & North Western in the office of the mechanical engineer. He left that position to go with the Northern Pacific at Livingston, Montana, and shortly afterward resigned to enter the service of the Chicago, Milwaukee & St. Paul at Lombard, Montana. Later he became general foreman for the Oregon Short Line, at Montello, Idaho. He next became a hydraulic engineer for the Bishop Creek Mining Company at Laws, Cal., but soon afterward entered railroad service again—this time as a drop pit foreman for the Southern Pacific. Subsequently he was in the employ of the Texas & Pacific, the International & Great Northern and the Missouri, Kansas & Texas. During the war Mr. Kershner served as second lieutenant, captain and major in the engineers and saw 17 months' service overseas. After his discharge from the service he went to the Texas & Pacific as general mechanical inspector and was later promoted to shop superintendent. A few months later he left this position to become master mechanic of the International & Great Northern at Palestine, Texas, which position he held at the time of his recent appointment.

Obituary

B. H. Bennett, general agent of the Chicago & North Western, with headquarters at Toronto, Ont., died on May 7.

Henry Boutet, for 31 years chief interchange inspector for all the railroads entering Cincinnati, O., and organizer of the Chief Interchange Car Inspectors' and Car Foremen's Association, of which Society he was president for seven years, died at his home at Ludlow, Ky., on April 25, at the age of 69.

John W. Mulligan, real estate and tax agent of the Chicago, Rock Island & Pacific, whose death was announced in the *Railway Age* of April 29 (page 1056), was born at Fort Charles, Bainbridge, County Down, Ireland, on June 21, 1874. He was educated in the United States, and after serving the Pullman Company, entered the employ of the Chemical National Bank, while pursuing legal studies at the same time. He entered railroad service on August 1, 1902, as a stenographer in the real estate and tax department of the Chicago, Rock Island & Pacific, and has served that company continuously since then. From 1902 until November 1, 1907, he served successively as stenographer, chief clerk and right of way agent, and on the latter date was promoted to assistant real estate and tax agent, with headquarters at Chicago. He was promoted to real estate and tax agent of the Rock Island system on January 1, 1920, and was serving in that position at the time of his death.